Intuitive Control Software For MOBOTIX Cameras

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HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

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HiRes
3 Megapixel
2048 x 1536
Software zoom

Skyline
Format free
Each image format
freely definable

30 Frames/s
VGA (640 x 480)
30 F/s Mega

Virtual PTZ
Digital pan, tilt,
zoom

Backlight
Safe using CMOS
without mechanical iris

Internal DVR
Internal via SD card,
external via Network

Win/Lin/Mac
Recording
via Network on PC
up to 1 Terabyte

Microphone & speaker
Audio
bi-directional via IP,
variable framerates

SIP-Client with video
IP Telephony
Alarm notify,
cam remote control

VideoMotion
Multiple windows
precision pixel-based

-22°F ... +140°F
Weatherproof
- 30° ... +60°C, IP65,
no heating necessary

IEEE 802.3af
PoE
Network power
even in winter

Robust
No moving parts
fiber glass housing

MxCC/MxEasy
Licence free
Video-Management-
Software

Notes

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1   INTRODUCTION TO MXEASY

Congratulations on your decision to select video security products from MOBOTIX. MOBOTIX offers you intelligent, high-resolution camera technology *Made in Germany*. The **MxEasy** monitoring software provides you with full control over all of the features of your video security system. This manual will introduce you to the basics of MxEasy.

We introduce you to the concept and the ideas behind the MOBOTIX MxEasy in the first chapter. The second chapter guides you through the simple installation of the program and shows you how to integrate cameras into your system. Chapter three provides you with a closer look at the basic functions and chapter four completes this overview by introducing the advanced functions of the software.

The *glossary* offers additional information about the technical terms used in this manual.

1.1   What Is MxEasy?

MxEasy allows you to quickly and efficiently implement and control a video security system of up to 16 cameras, making it the perfect choice for all small and compact camera networks. The program automatically finds all available MOBOTIX cameras and carries out the initial configuration for the selected cameras. You are not required to have an in-depth knowledge of network technology.

Once the cameras are integrated into the system, you can use MxEasy to comfortably control the most important functions of the connected cameras. Virtual zooming, panning and tilting in the live image and the recorded video sequences are just as easy as setting up manual or scheduled recording times. This way, it makes no difference whether you choose to monitor the screen constantly or just occasionally check up on the most recent events.

Main Window

Camera/
Event Window

Event Window

The **camera/event window** area is intelligently divided up according to the number of connected cameras: The **event window** in the bottom right-hand corner of the screen always displays the last event of the active camera in the main window. The three camera windows displayed above it can be set to display either the live images from up to three additional cameras or the last events of the active camera in the main window (if fewer than four cameras are connected to MxEasy).

Easy Operation

To keep MxEasy simple and easy to use, camera operation has been streamlined to include only the absolute necessities. The buttons are marked with easy-to-understand symbols and yellow tool tips that are displayed automatically and provide a description of each button. All other control elements are intuitive to use. If any problems occur, you can quickly and easily undo any incorrect settings using the automatic configuration backup feature.

Security

MxEasy provides you with four different access levels (*guest, user, owner, administrator*), allowing people with different levels of authorization to access the camera images. This makes it possible to install MxEasy on several computers at the same time without causing access-related conflicts. MxEasy is easy to understand and simple to use, so the risk of operating errors is minimal. Optional HTTPS encryption (using certificates generated by the camera or created by the administrator) helps you to prevent unauthorized users from accessing MxEasy.

1.2   Why MxEasy And Not MxControlCenter?

MxEasy is the perfect choice for all small and mid-sized video security systems using cameras connected in a network. Operation using MxEasy is much simpler than with the professional video management software **MxControlCenter**, because, as its name implies, MxEasy is specially developed for ease of use. All of the main features of the MOBOTIX software are available in MxEasy.

Note
When planning your MOBOTIX system, make sure to note that with MxEasy you can integrate and manage up to 16 cameras. For larger video security systems, we recommend that you use **MxControlCenter** (`www.mobotix.com` under `Support > Software Downloads > MxControlCenter,`).

1.3   What Do I Need For My MOBOTIX System?

We will introduce the individual components of your MOBOTIX system in this section. You will also find tips about additional information about products found on the MOBOTIX website.

1.3.1   Computer System

The computer system on which MxEasy is installed must meet the following criteria in order to ensure optimum operation of your MOBOTIX system:

- Computer with a current operating system (Windows XP or higher, Mac OS X 10.4 or higher, Linux/UNIX with latest kernel available)
- Monitor with a minimum resolution of 1,024 x 768 pixels. The resolution should be higher (at least 1,280 x 1,024) in order to be able to use the full-screen display of one or more cameras.
- 2-button mouse with scroll wheel
- To create the network connections, you need a switch or router with switch functionality.

1.3.2   MxEasy

You can find MxEasy at **www.mobotix.com** under **Support > Software Downloads > MxEasy**:

- **Windows, Mac OS X:** Download the MxEasy installer for your operating system from the MOBOTIX website and save the file to your computer (for example, on the *Desktop*). For more information on installing MxEasy, see *Section 2.1, Installing MxEasy.*
- **Linux/UNIX:** *We are currently developing a Linux version of MxEasy.*

Automatic Software Update

MxEasy informs you automatically when a newer version of the program is available (Internet connection required). The new version can be installed automatically if you wish. For more information, see *Section 4.5, Software Update.*

1.3.3   MOBOTIX Cameras

One of the most important considerations when designing a MOBOTIX system is determining which cameras are best suited for which type of situation. The MOBOTIX website offers information on the latest camera models to aid you in making your decision. See **www.mobotix.com** under **Products**. Here, you can also download the user manuals of the individual MOBOTIX cameras.

Finding New Cameras Automatically

MxEasy automatically detects new MOBOTIX cameras in the network. The **Add Cameras** button will flash, indicating that the software has found a new video source. Click this button to integrate the new cameras into your MOBOTIX system.

1.3.4 Power Supply

The Ethernet cable supplies the MOBOTIX cameras with power. You can use either MOBOTIX PoE products or switches with PoE power supply in accordance with **IEEE 802.3af**.

MOBOTIX PoE (Power over Ethernet) Products

- **Power Supply (MX-SNT-E01-30-RJ):** This power supply unit needs to be used in conjunction with the **Network Power Adapter**. It is particularly suited to small installations and is available in different versions (for the U.S., Japan, U.K./Ireland, Australia).

- **Network Power Adapter (MX-NPA-3-RJ):** The Network Power Adapter, together with the **power supply**, is used to supply power to the MOBOTIX cameras over the network cable. The integrated LED indicates whether or not the camera is being supplied with power.

- **Netpower Box for up to 4 Cameras (MX-NPR-4):** The Netpower Box supplies power for up to four cameras and is connected between the switch and the MOBOTIX cameras. This unit is particularly suited to smaller systems and can be easily attached to DIN rails using the supplied clip. The integrated LED indicates whether or not the camera is being supplied with power. The unit is extremely robust and durable thanks to the fanless design of the Netpower Box.

- **Netpower Rack for 8 or 20 Cameras (MX-NPR-8/20):** For larger systems, we recommend the Netpower Rack for 8 or 20 cameras as they can be installed in 19-inch racks (2 rack units). The integrated LED indicates whether or not the camera is being supplied with power. These units are also extremely robust and durable thanks to the fanless design of the Netpower Racks.

For more information on MOBOTIX PoE products, see `www.mobotix.com` under **Products > Accessories > Power Supply**.

Switches With PoE Power Supply

When purchasing switches with PoE power supply in accordance with **IEEE 802.3af**, make sure that the required number of ports is supported (in certain units, only some of the ports are equipped with PoE power supply).

Uninterruptible Power Supplies (UPS)

An uninterruptible power supply (*UPS*) consists of a rechargeable battery and electronic components. These components ensure that the battery is correctly charged and prevent the connected units from being damaged as a result of voltage peaks and lows. If an electrical surge occurs, the voltage peaks are filtered out and in the event of low voltage, the UPS takes over the power supply of the connected units for as long as the power stored in the battery lasts.

We recommend safeguarding the network components of your MOBOTIX system (camera power supply, switches, routers and even file servers) using UPS units as they can ensure that your system will continue to operate properly, even in the case of a complete power failure.

1.3.5   Switch

A switch connects individual network-ready units to one another and delivers data from the sending units to the receiving units. In larger networks, one or more switches form the backbone of the system over which the data is transferred to the individual computers and/or network devices. In a smaller network, this function is normally performed by a **router** with multiple network ports (for example, in a home network).

1.3.6   Router

A router is normally used to establish a connection to the Internet. Technically speaking, a router transfers requests to external IP addresses of computers that are located outside of the local network. If a router has a sufficient number network ports, it can also perform the functions of a switch.

A router performs these functions, among others, for the units joined in the network:

- **DHCP:** Using this function, individual network devices in the local network (cameras and computers) are automatically assigned unique IP addresses to enable communication between these units.

- **Internet Connection:** The router establishes a connection to an Internet service provider (ISP) and receives a unique public IP address (an address that is recognized and available online). Requests sent to an external IP address (e.g. a website) are sent to this public address via the router and the results are sent back to the requesting computer. Normally, a permanent connection to the provider is established.

- **DynDNS:** Each time the Internet connection is reestablished, the ISP automatically assigns the router a different public IP address (for example, if the provider interrupts the connection overnight). In order to assign a unique, static name to these constantly changing IP addresses, register with a free DynDNS provider (for example,`www.dyndns.org`) and create a name for your router and Internet connection (for example, `myhomenetwork.dyndns.org`).

This unique name (for example, `myhomenetwork.dyndns.org`) is entered into the router along with the registration information of the DynDNS provider (user name and password). Each time the router's public IP address is reset by the provider, the router registers this IP address with the DynDNS provider where the address is then linked to your unique name.

- **Port Forwarding:** It is possible to access individual network devices (for example, cameras) from outside the network using this router feature. A camera is assigned to a port in the router. This port sends information to the internal network address of the camera. In conjunction with DynDNS, you can access your first camera as follows:`myhomenetwork.dyndns.org:19901`. MxEasy configures the connected cameras automatically so that each camera can be used from outside the network as a proxy camera.

For more information on these services, see Section 10.3 *Directly Accessing MOBOTIX Cameras via the Web* in the *software manual*.

1.4   How Is MxEasy Used?

The following examples are possible ways to use MxEasy. They contain information about the required components and setup for the individual scenarios:

- **House** with two cameras
- **Gas station** with five cameras
- **Hotel** with eight cameras

1.4.1   House With Two Cameras

This scenario consists of two MOBOTIX cameras that guard the entrance and the rear of a house. When the homeowner is away for the weekend, these cameras use integrated video and infrared motion detectors to detect unwanted movements around the house. In case of an alarm, the video sequences are recorded in the cameras (SD card or internal Flash storage). In addition, this triggers a call to the homeowner's cellular phone and sends the images to the homeowner via e-mail.

MxEasy is the user interface in this example. Using this software, the user can conveniently and easily set up and operate their MOBOTIX system.

Required Components

- 1 **MOBOTIX Q22M**
- 1 **MOBOTIX D22M** with L22 lens and outdoor wall mount
- 2 **MOBOTIX power supply units**, 2 **MOBOTIX Network Power Adapters** (or 1 PoE switch)
- Switch with at least 5 ports

- Network patch cables of sufficient lengths
- Computer installed with a Windows, Macintosh or Linux operating system
- Configured DSL router (required for telephone and e-mail notification) and external access via DynDNS (if desired)

For more information, see *Section 1.5, Installation Procedure* and *Section 1.6, How Can I Expand My MOBOTIX System?*

1.4.2   Gas Station With Six Cameras

In this scenario, a gas station is guarded using an MOBOTIX system. The video sequences are recorded in the cameras (SD card or internal Flash storage).

Two cameras record the events at the pumps (continuous recording), the camera in the shop records any unauthorized access, the camera in the car wash documents all events for use in case of a complaint, and the camera above the register records the entire cash register area (continuous recording).

Personnel can trigger different types of alarms and recordings using the **Manual Alarm** and **Operation Mode** functions on the MxEasy user interface:

- **Manual Alarm:** This button triggers an alarm and notification service that contacts the owner via telephone and e-mail.
- **Alert Mode:** In this operation mode, all cameras connected to MxEasy record video and audio data continually until this mode is switched off.

MxEasy is the user interface in this example. Using this software, the user and his or her staff can conveniently monitor and operate the MOBOTIX system.

Required Components

- 1 **MOBOTIX Q22M-Sec**
- 3 **MOBOTIX D22M-Sec**
- 1 **MOBOTIX M22M-R16**
- 1 **MOBOTIX M12D-Sec**
- 1 **MOBOTIX power supply unit**, 1 **MOBOTIX Network Power Adapter** , 1 **MOBOTIX Netpower Box** for supplying power to four cameras (or a PoE switch with at least six PoE ports)
- Switch with at least seven free ports (six cameras and one computer)
- Uninterruptible power supply (UPS) units for supplying the cameras, the switch and, if desired, the computer
- Professionally laid Ethernet cables guided to the mounting positions of the cameras (no separate power cables required)

- Computer installed with a Windows, Macintosh or Linux operating system
- Configured DSL router (required for telephone and e-mail notification and external access via DynDNS)

For more information, see *Section 1.5, Installation Procedure* and *Section 1.6, How Can I Expand My MOBOTIX System?*

1.4.3 Hotel With Eight Cameras

In this scenario, a complete hotel is guarded using an MOBOTIX system. The video sequences are recorded in the cameras (SD card or internal Flash storage).

The cameras at the main entrance and the delivery entrance are event-controlled. Each of these cameras is connected to a **MOBOTIX ExtIO**. Additionally, these cameras can be used as a door intercom and to remotely open the doors. In the underground garage, there are two event-controlled cameras that record cars entering the garage or persons present in the area. Cameras in both hallways on the second floor and the third floor, in the gym and in the swimming pool area record all events when persons are present in these areas. A camera located in the lobby makes continuous recordings with a variable frame rate of all events in the entire reception area.

using the **Manual Alarm** feature. This alarm can be configured to trigger notification via telephone (and/or e-mail) to be sent to predefined recipients.

Hotel staff can use the following additional features with the connected ExtIO modules for the cameras at both entrances:

- **Door Opener:** Opens the door connected to the corresponding camera.
- **Light:** Switches on the light located near the camera.
- **Speaker:** Switches on the camera microphone and the ExtIO on the speakers of the computer. Note: When the cameras are displayed one after another using the **Camera Sequencer**, the software plays the sound from the active camera.
- **Microphone:** Activates the sound on your computer microphone and feeds it to the camera speaker (or the connected ExtIO), allowing your voice to be heard.
- **Acoustic Alarm:** Plays a preselected audio file over the camera speaker (or the connected ExtIO).

Required Components

- 6 **MOBOTIX Q22M-Sec**, 5 with **In-Ceiling set**
- 1 **MOBOTIX D12D-Sec** with 1 L22 lens, 1 L43 (parking lot)
- 2 **MOBOTIX M22M-R16** with L22 lens

- 1 **MOBOTIX power supply unit**, 1 **MOBOTIX Network Power Adapter**, 1 **MOBOTIX Netpower Rack 8** for supplying power to eight cameras (or a PoE switch with at least nine PoE ports)
- Additional switch with at least ten free ports
- Uninterruptible power supply (UPS) units for supplying the cameras and the switch
- Professionally laid Ethernet cables guided through to the mounting positions of the cameras (no separate power cables required)
- Computer installed with a Windows, Macintosh or Linux operating system

For more information, see *Section 1.5, Installation Procedure* and *Section 1.6, How Can I Expand My MOBOTIX System?*

1.5   Installation Procedure

We will describe the most important steps for basic installation in this section. These steps are the same for all scenarios. Steps that apply to only one of the scenarios are correspondingly indicated by symbols in the margins.

For thorough instructions regarding camera installation, see Section 2 *Installation* in the corresponding *camera manual*. For information on the power supply and connecting cameras to the network, see the section *Connecting the Camera to the Network and to the Power Supply* in the corresponding *camera manual.*

- **Installing the Ethernet Cable and Mounting the Cameras:** Determine where you want to mount the cameras. Run the Ethernet cable to the mounting position of the camera. Mount the cameras and connect the Ethernet cable to the corresponding camera:
  - In the **House** example, one camera (Q22M) is mounted over the front door and the other camera is mounted behind the house under the roof overhang.
  - In the **gas station** example, one D22M-Sec monitors the pumps in order to record persons and vehicles in the area. The car wash cameras are mounted at the entrance and exit of the car wash and the shop camera is mounted in the corner of the shop space. The register camera is mounted on the ceiling above the cash register area so as to monitor both customers and the register.
  - In the **hotel** example, one Q22M-Sec is mounted at the main entrance of the hotel and the corresponding ExtIO is mounted next to the door of the main entrance where it serves as a door intercom. Two M22M-R16 cameras monitor the entrance and the back side of the underground garage. The remaining five Q22M-Sec cameras are installed in the planned positions using In-Ceiling sets (in the hallways of the second and third floors, in the swimming pool area, in the gym and above the reception desk). The camera mounted above the reception desk is mounted in the ceiling so as to monitor the entire reception area.
- **Setting Up the Power Supply:** Set up the power supply of the camera. Use either a commercial PoE switch, MOBOTIX Network Power Racks/Boxes, or **MOBOTIX power supply units** in conjunction with **Network Power Adapters**.

- **Connecting the Cameras:** Connect the Ethernet cable from the cameras to the PoE switch (or the Network Power Rack/Network Power Adapter). The PoE switch is connected to the local area network (LAN) via another Ethernet cable.

The MOBOTIX cameras are now ready to use and available in the local area network. They can now be integrated into MxEasy.

Integrating The Cameras Into Mxeasy

- **MxEasy:** Download the MxEasy software for your operating system and install the application (see *Section 2.1, Installing MxEasy*).

- **Finding Cameras Automatically:** Launch MxEasy. The application automatically searches for any available MOBOTIX cameras in the network and displays them along with their preview images. At this point, you can assign names to the individual cameras (see *Section 2.2.1, Automatic Camera Search*).

- **Network Configuration for the Cameras:** MxEasy will prompt you to enter the IP addresses to be used for the cameras in the network (or you may select the option *DHCP*). If there is a DSL router in the network, MxEasy automatically selects *DHCP* (see *Section 2.2.2, Adding New Cameras*).

- **Resetting to Factory Defaults:** When prompted, you may choose whether or not you wish to reset the cameras back to the factory defaults. If you have already configured the cameras using MxEasy, you may also choose to retain the current settings. MxEasy automatically recognizes whether or not these settings have been made and recommends the appropriate option.

After you have completed these steps, the cameras are displayed in MxEasy.

- **Displaying Live Images:** Click the button **Next Camera** to display each camera one after another in the main window of MxEasy and select the desired image section (see *Section 2.3, Displaying Live Images*).

- **Using Image Sections and Zoom Functions:** If necessary, define different image sections and change the zoom settings (see *Section 2.4, Using Image Sections And Zoom Functions*).

- **Setting Up Alarms and Recordings in the Alarm Planner:** Define the time period during which alarms are to be detected and select the events for which the camera alarms are to be triggered (see *Section 2.5, Setting Up Alarms And Recordings*).

- **Testing Recordings:** Trigger a manual alarm by clicking **Manual Alarm** to test the recording.

- **Evaluating Recordings:** Evaluate the recorded video sequences (see *Section 2.6, Evaluating Recordings*).

- **Setting Up Alarm Notification:** Make the settings for notifications via telephone, sounds on event and e-mail (see Section *Section 2.5.6, Setting Alarm Notifications*).

- **Creating Users and Passwords:** If the computer is publicly accessible, make sure to set up passwords for the **administrator**, **owner** and **user** access levels (see *Section 2.7, Setting Up Users And Passwords*) after you have finished configuration.

When you have completed these steps, see *Section 3, Advanced Operation* for further configuration options:

- **Printing and Saving Images and Exporting Recordings:** You can print and save images from the camera at any time (live images or recordings) and even export recorded video sequences separately (see *Section 3.1, Saving And Printing Snapshots*) using the print function and the convenient preview option.

- **Saving the Settings:** Save your settings so that you can easily restore the selected settings later (for example, after experimenting with the image settings) (see *Section 3.2, Backup And Restoring Settings*).

1.6   How Can I Expand My MOBOTIX System?

You can expand your MOBOTIX system with the following components to adjust the system to suit your needs:

- **MOBOTIX ExtIO:** This expansion module, which is compatible with all MOBOTIX IT and Secure models, can be used to set up a separate door intercom via a USB or Ethernet cable in addition to the camera (USB: max. 5 m, Ethernet: max. 100 m, Mx2wire: max. 500 m). The integrated buttons act as a call button and a light switch, and speech is transmitted over the microphone and speakers of the ExtIO. A key switch can be integrated into one of the two signal inputs, for example. Using the key switch, the system can be manually activated and deactivated. The other input is used to transfer the signals of an additional sensor (for example, a second motion detector). The two external consumers (for example, door opener and light) are controlled using relays.

  Further information on MOBOTIX ExtIO is available at **www.mobotix.com** under **Products > ExtIO**.

- **MOBOTIX CamIO:** This expansion module for all MOBOTIX M12 and M22M IT and Secure models can be used to directly connect appliances up to 500 W (for example, a halogen spot light) and to connect a second appliance using relays. This module provides two signal inputs for evaluating external sensors or integrating a key switch (see below). Like the MOBOTIX ExtIO, the CamIO can be used to set up a door intercom by connecting an external speaker and an external microphone with a pre-amplifier (M12 models). The camera will continue to be supplied with power even in the event of a power failure, thanks to the battery buffering of the **CamIO ACplus**.

  Further information on MOBOTIX CamIO is available at **www.mobotix.com** under **Products > CamIO**.

- **Joystick:** A joystick with three axes (two axes via the control stick and one axis via the rotating grip) and memory buttons for frequently used camera positions simplify

the handling of the MOBOTIX system if users need to make frequent use of zoom functions to access saved camera positions.

- **Key Switch:** A key switch can be connected to one of the signal inputs of the MOBOTIX camera, ExtIO, or CamIO to allow for quick activation and deactivation of your MOBOTIX system.

- **Protecting the Power Supply Using UPS:** The cameras are able to continue working even when the power supply fails if you use an uninterruptible power supply (UPS) unit. The low power consumption of MOBOTIX cameras permits a long UPS back up period. We also recommend protecting the network components (switches and routers) using UPS units. If an alarm is triggered during a power failure, notifications can still be sent.

2   GETTING STARTED

We described the basics of MxEasy in the previous chapter. In this chapter, you will learn everything you need to know to get started with MxEasy:

- *Section 2.1, Installing MxEasy*
- *Section 2.2, Using MxEasy For The First Time*
- *Section 2.3, Displaying Live Images*
- *Section 2.4, Using Image Sections And Zoom Functions*
- *Section 2.5, Setting Up Alarms And Recordings*
- *Section 2.6, Evaluating Recordings*
- *Section 2.7, Setting Up Users And Passwords*

For more information on saving, printing, exporting, backup and restoring settings, see *Chapter 3, Advanced Operation*:

- *Section 3.1, Saving And Printing Snapshots*
- *Section 3.2, Backup And Restoring Settings*

2.1   Installing MxEasy

The current version of MxEasy: is available for download on the MOBOTIX website (**www.mobotix.com** under **Support > Software Downloads > MxEasy**).

Note
Only registered users are permitted to download the MOBOTIX software from the website. If you are not yet a registered user at MOBOTIX, why not register now? Registered users have the following benefits: • Access to the entire range of the freely accessible MOBOTIX software • Automatic subscription to the newsletter (if desired) to inform you about the latest MOBOTIX products

2.1.1   Installing MxEasy On Windows

- Open the desired software release under the name **MxEasy Windows**.
- Download the file for automatic installation (***.Setup.exe**) from the MOBOTIX website and save the file to your computer (for example, on the *Desktop)*.
- Start the installation assistant by double-clicking the ***.exe** file and follow the instructions of the installation assistant.

2.1.2   Installing MxEasy On Mac Os X

- Open the desired software release under the name **MxEasy Macintosh**.

- Download the file for automatic installation (***.MPKG.ZIP**) from the MOBOTIX website and save the file to your computer (for example, on the *Desktop)*.

- Unpack the contents of the **MPKG.ZIP** file by double-clicking it.

- Start the installation assistant by double-clicking the ***.pkg** file and follow the instructions of the installation assistant.

2.1.3   Installing MxEasy On Linux/Unix

We are currently developing a Linux version of MxEasy.

Note
After the software has been successfully installed, MxEasy is updated automatically when a new version of the program is made available on the MOBOTIX website. For more information, see *Section 4.5, Software Update*.

2.2 Using MxEasy For The First Time

When you launch the program for the first time, the **MxEasy Assistant** automatically finds all MOBOTIX cameras that are available in the network and guides you through the initial configuration for the selected cameras. Now you can set up the cameras quickly and easily using MxEasy.

Automatic Camera Search

If you start MxEasy for the first time on a computer, the Camera Selection dialog box will appear, showing all detected MOBOTIX cameras. The camera list will be updated automatically as soon as new cameras are connected to or removed from the network.

Table columns

Filter Field

Legend

Preview
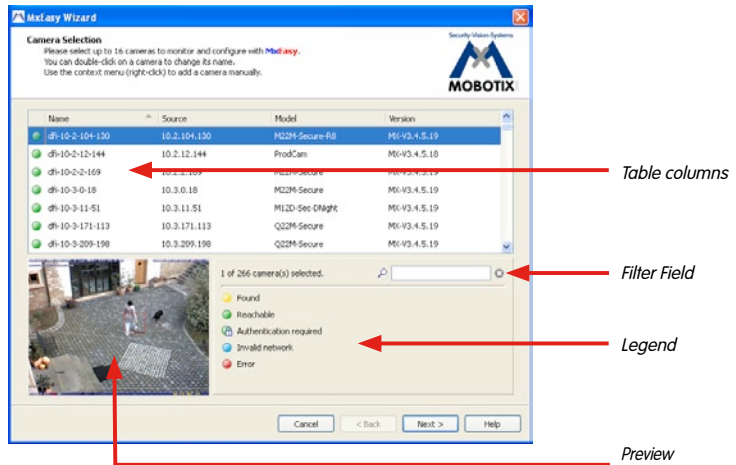
MxEasy also automatically monitors and displays the operating status of all cameras. Cameras that are not on the same subnet as the computer will get a differently colored icon than the cameras that are on the same subnet. Likewise, the cameras that have an unknown password or for which no user name/password combination has been specified in MxEasy will be displayed in a different color.

Note
If MxEasy does not find any cameras (the camera selection list contains no entries in this case), check the firewall settings of your computer. If necessary, customize the settings for MxEasy to allow connections to and from MxEasy. If you do not have permission to modify these settings on your computer, contact your system administrator for assistance.

Editing Options In The "Automatic Camera Search" Dialog Box

To select more than one camera, simply use Shift-click for a block selection or **CTRL**-click for individual selection. Right-click a selected camera to call up the pop-up menu for that camera. Using the **Add** command, you can add cameras that are not already included in the list (for example, a remote camera over the Internet).
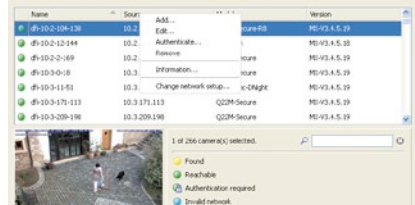
- **Columns:** Click one of the columns to sort the camera list by name. You can change the order in which the cameras are sorted by clicking again. Double-click the camera name to change it or click **Edit** in the pop-up menu.

- **Filter Field:** You can enter any filter criteria in this field to narrow the list of cameras displayed (for example, if you enter 3.4.4.7, the list will be narrowed down to the cameras that use that particular software version).

- **Legend:** There are five statuses that MxEasy cameras can display. These statuses are shown by the colored circles listed before the names of the cameras (see box *Possible Camera Statuses*).

    - **Green:** The camera is responding and can be integrated immediately.

    - **Green with a lock symbol:** The camera can be integrated, but it is password-protected and the password has not yet been entered into MxEasy. Right-click the camera, select **Authenticate**, and enter the correct user name and password. Once a valid user name and password have been entered, the symbol changes to a green circle and the lock disappears.

    - **Blue:** The camera has been found on the network, but it needs to be adjusted to the network configuration of the MxEasy computer. This is the default status for cameras with factory settings. Later, the Assistant will be able to configure these cameras automatically.

    - **Yellow:** The camera has been found, but it cannot be integrated at this time. This is the case if MxEasy is busy determining the status of the selected camera, for example. The yellow circle will be replaced by a green or red circle after a short time.

    - **Red:** The camera has been found, but is not responding. This can be caused by a disruption in the HTTP connection (network error, firewall, etc.), for example.

- **Preview:** MxEasy displays the live images from the selected camera in this field (if more than one camera is selected, the preview window displays the images from the last camera to be selected).

If all the desired MOBOTIX cameras are **Accessible** in the video source list, you can proceed to *Section 2.2.2, Adding New Cameras*. Cameras with the status **Invalid Network** can be reconfigured for the "proper" subnet, as described in the following section.

Configuring Mobotix Cameras For A Different Network

Camera found in a different subnet
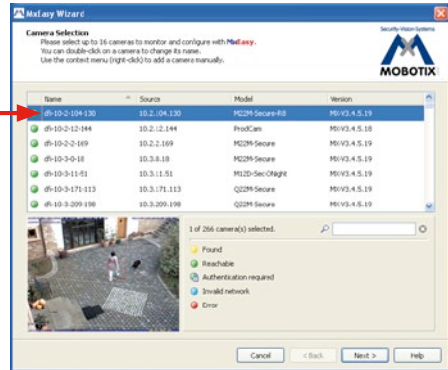
Using Bonjour, MxEasy finds not only cameras on the same network as your computer, but also MOBOTIX cameras located in other subnets (status ● **Invalid Network**). In such a case, you would not be able to establish any connection to cameras in a different network or subnet (without going into much further details of TCP/IP network configurations). This is possible, for example, when a camera with a factory IP address is connected to a network in which a DHCP server automatically assigns the IP addresses. MxEasy can automatically configure such a camera so that it is "integrated" into your existing network. To do so, simply highlight the desired camera in the list.

Clicking **Next** displays a security prompt. If you click **OK**, the dialog box for reconfiguring the selected camera will appear.
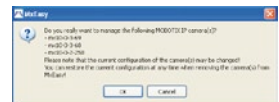
If your computer automatically obtains its IP address from a DHCP server, then this is certainly the best choice for that specific camera and most likely for all other cameras that have been found in a different subnet (the **Get IP address automatically** option). If you have assigned a fixed IP address to your computer, you will probably want to assign fixed IP addresses (issued by your system administrator) to every camera (the **Use this IP address** option). Normally, you enter the same configuration used for the network settings of your computer.

Once you click **OK**, the selected cameras will be reconfigured automatically. All reconfigured cameras will now be working in the same subnet as the computer and they are displayed as **Accessible** in the camera list.

2.2.1   Adding New Cameras

Select the camera that you want to add. To select more than one camera, simply use SHIFT−CLICK for a block selection or the COMMAND KEY and left-click for individual selection. The preview always displays live images from the selected camera (if more than one camera is selected, this window always displays the live images from the last camera to be selected).


Select multiple cameras using Ctrl/ Cmd or Shift
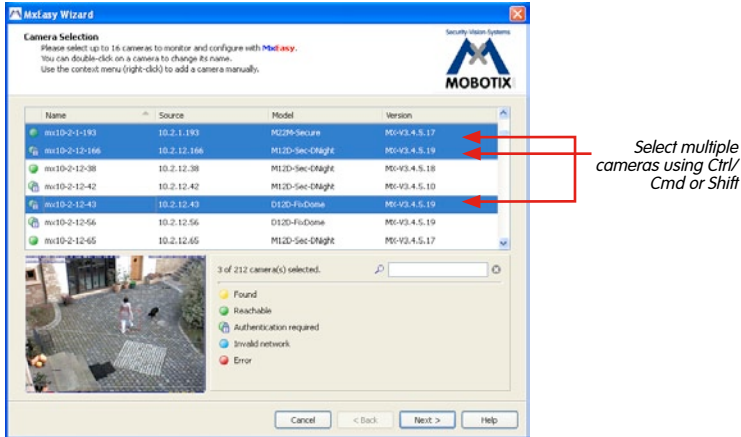
Start the installation procedure by clicking **Continue**. The software then opens a dialog box asking if you want MxEasy to manage the selected cameras:
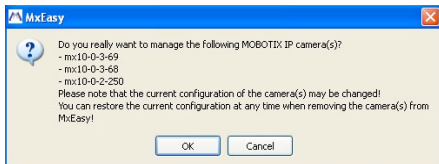
After you select "OK," MxEasy creates a backup copy of the camera configurations, which can be restored later if necessary.

You can choose whether to reset the cameras to the factory defaults in the next step. We recommend that you do this for new installations.
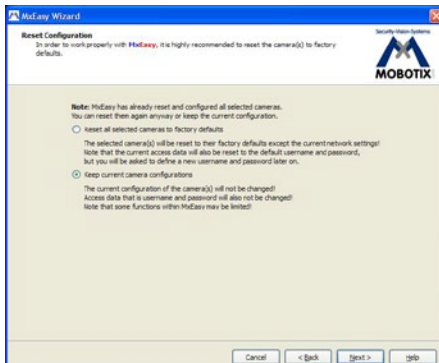
You can select a user name and password to be used for all selected MOBOTIX cameras in the following dialog box (see also *Section 4.2, Setting Up A Global User For All Mobotix Cameras*). **We highly recommend this for security reasons!**

Caution

Make sure that you store information on user names and passwords in a secure location. Passwords can only be reset at the factory and this service is subject to a fee!

If no user name and password have been entered, MxEasy uses the factory defaults (user **admin**, password **meinsm**). This automatically enables public access to the Guest screen via a browser window.

The cameras are displayed in the following dialog box after the selected cameras have been reconfigured:
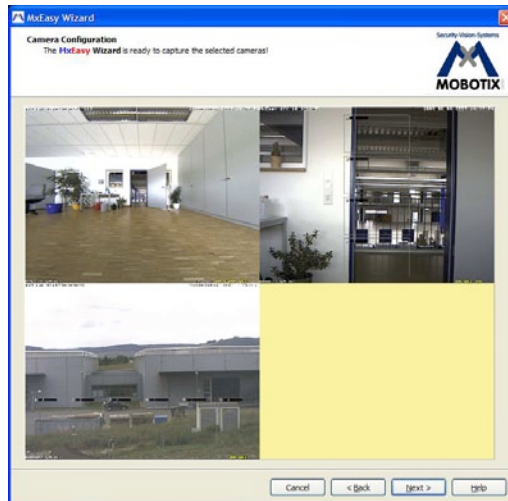
Click **Continue** to close the Assistant and display the selected cameras in MxEasy.

MxEasy saves the configuration of the cameras before the cameras have been integrated into the system for the first time (and each time the program is launched). This way, you can safely overwrite the camera settings when integrating the cameras into MxEasy. The **Backup Configuration** button offers you the option to undo changes you have made. For more information on saving and restoring configurations, see *Section 3.2, Backup And Restoring Settings*.

Cameras that are no longer needed should be deleted from MxEasy. This way, you can reset the connection to the MxEasy computers. Before these cameras are deleted, they should be restored to the settings they had prior to initial integration in MxEasy (the **Camera > Remove Camera** menu command). MxEasy will prompt you to do this when removing the cameras. This process can take place fully automatically.

In addition to integrating cameras that are available in the local network, you can also use remote cameras in MxEasy (for example, a camera available online via DynDNS) (the **Add Cameras** menu command in the pop-up menu of the camera list).

When there are a larger of number of cameras in the network, it may take a moment for MxEasy to create the camera list and retrieve the camera information. However, you can select a particular camera entry before the entire list has been populated. The information and the preview image for this camera will be found and displayed first.

The first time you launch MxEasy or the first time you use MxEasy to access MOBOTIX cameras, the Microsoft Windows firewall may display a warning dialog box. Allow the program to access the port (the Bonjour port).

2.3   Displaying Live Images

After the Assistant has finished all of the necessary preparations, MxEasy displays the first live images of your MOBOTIX system in the **Layout View**:

Camera window

Event window
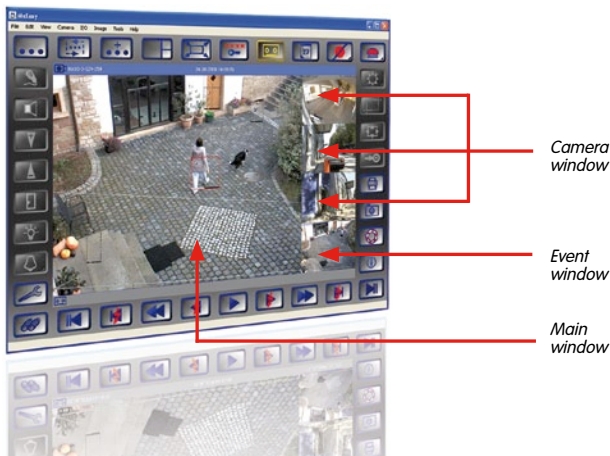
Main window

Use the mouse to drag the desired camera into the main window or double-click the desired camera to display a different camera in the main window. The cameras then switch places.

The **camera/event window** area is intelligently divided up according to the number of connected cameras: The **event window** at the bottom right of the screen always displays the last event. If there are fewer than four cameras connected to the system, the upper windows are filled with the last events.

When you display an event by double-clicking or dragging the event into the main window, MxEasy automatically switches to **Player** mode and displays the desired event in the main window. For more information on Player mode, see Section *Section 2.6, Evaluating Recordings*.

Note
If the time as displayed in the title bar of the main window is blinking, it means that the system time of the camera in main window differs by more than 15 seconds from the system time of the computer. Make sure to synchronize the computer and the connected cameras using a time server. For additional information on this topic, see *Section 4.1.5, Time Settings*.

Camera Overview

A maximum of four cameras can be displayed in the **Layout View**. By pressing the **Camera Overview** button, you can switch to the **Camera Overview** :

In this view, you can activate and/or deactivate individual cameras and change the order of the cameras by moving them with the mouse. Only active cameras can be displayed in the live view of MxEasy and in the sequencer (see also *Section 3.3, Sequencer*).

2.4 Using Image Sections And Zoom Functions

The MxEasy software supports digital "Pan-Tilt-Zoom" for all MOBOTIX cameras in addition to displaying the live images.

2.4.1 Activating The Ptz Functions

The following options are available for using the PTZ functions:

- Roll the mouse wheel forwards in order to zoom in on the image. Roll the mouse wheel backwards in order to zoom out from the image.

- Press and hold the **ALT** key and use the mouse to draw a rectangle in the live image. MxEasy displays the selected image section in the main window.

- Press and hold the COMMAND KEY. Press the buttons ⊞ or ⊟ in order to shrink or enlarge the image section.

- Rotate the control stick of the joystick to zoom in on or zoom out from the image.

- Activate the **Toggle PTZ** button to return to the last PTZ position (if you have previously used the PTZ feature to make changes).

- Click the **PTZ Views** button and click one of the position buttons briefly to adjust the camera to the saved position.

Notes
When the **Toggle PTZ** button is activated, it means that panning and tilting functions are available for the current camera image in the main window. The software displays an arrow cursor over the live image. When you move the mouse or the joystick, the highlighted black arrows of the cursor indicate the direction in which the image is being moved.

In order to select an image section within a zoomed image, press and hold the **ALT** key and use the mouse to draw a box within the live image. MxEasy displays the selected image section in the main window.

To reset the zoom settings, simply deactivate the **PTZ** button. To do this, you can also press and hold the **COMMAND KEY** while pressing the **HASH KEY** (#).

2.4.2 Panning And Tilting The Image Section

You can use the following features once you have defined an image section:

- Use the mouse to drag the zoomed image area in the desired direction.

- Press the arrow keys on the keyboard to drag the image section as desired.

- Move the joystick to pan and tilt the image section as desired.

After you have defined the image section, you can save this view to be used later.

Notes
You can deactivate the PTZ functions using the **Lock PTZ for All Views** menu command in the pop-up menu of the **Toggle PTZ** button. You can no longer select image sections or pan/tilt the image.

2.4.3 Saving Views

Proceed as follows to save defined image sections or PTZ positions:

- Click the PTZ Views button to activate the position buttons in the function bar. **MxEasy** displays the buttons of the position bar:

- Click and **hold** one of the numbered position buttons (position 2 in the example) until the on-screen message reads View 2 stored! to save a position. MxEasy now places a green marker on the button to indicated that the position has been assigned and the button has been activated.

  The number keys on your computer can also be used to save positions: When you press and **hold down** a number key (for example, 2), this position is saved (position 10 is saved by pressing 0).

- If you would like to return to a saved position, press the corresponding button or key (for example, 2 for position 2) briefly. **MxEasy** displays the corresponding view. (Position 10 can be activated by pressing 0.)

- If you have a joystick with save buttons installed on your computer, you can also use these buttons to save frequently-used positions.

You can use this feature to save **up to ten p positions for e each camera** in your MOBOTIX system and activate them as needed.

Hinweise
The four cardinal directions can be selected in the pop-up menu of the **Select PTZ Views** button for MOBOTIX Q22/Q24 models with an L11 lens (360 degree panoramic view). For more information, see the *Configuring the MOBOTIX Q22M* section in the *Q22M camera manual.*

Jump to Views 1 - 10
Jump to North
Jump to East
Jump to South
Jump to West

2.4.4 Selecting Camera Views

You can select one of the views available for the selected MOBOTIX camera using the pop-up menu of the **Toggle PTZ** button.

Camera Views (MOBOTIX Non-Q Models)

- **Full Image:** The entire live camera image is displayed (without inset image).
- **Lens Correction:** The entire live camera image is displayed with lens correction. This option is available for MOBOTIX cameras with L11 and L22 lenses.
- **Picture-in-Picture:** This option displays a small image from one camera sensor inset in the large image of the other. This setting is available on MOBOTIX Dual models only.
- **Picture in Zoom:** This displays the entire live camera image as a small picture inset in a large picture of the zoomed live camera image. You can move the zoomed-in section of the large image (PTZ commands are available) by clicking in the smaller live image.
- **Event in Picture:** This displays a small picture of the latest event image inset in a large picture of the live camera image.

For more information on the different views available for MOBOTIX cameras, see Section 5.5.3 *General Image Settings* in the *software manual.*

Camera Views (MOBOTIX Q Models with L11 Lens)

- **Full Image:** The entire full image of the image sensor is displayed.
- **Normal:** A corrected image is displayed. This image can be panned and tilted. This is the factory default image setting for the Q camera models.
- **Surround:** The images of four virtual cameras in each of the four cardinal directions are displayed in the same view. You first need to specify which direction is North. All four views can be changed independently of each other using PTZ commands.
- **Panorama:** This displays the corrected image of an entire room (corrected 180° panorama) from the left to the right wall. This view is available for the wall-mounted MOBOTIX Q model only. The aspect ratio of the view is 8:3 (width to height).
- **Twin View:** A 180° panorama view of the Northern half of the image is shown together with a panorama view of the Southern half of the image with an aspect ratio of 4:3 (width to height). This view is available for the ceiling-mounted MOBOTIX Q model only. Both partial views (North and South) can be changed independently of each other using PTZ commands.
- **Panorama/Focus:** This view combines the panorama view (see above) with two virtual 180° views of the entire room and provides a combination of the panorama view (8:3) and two smaller views (with an aspect ratio of 4:3 each) in one large picture. This view is available for the ***wall-mounted*** MOBOTIX Q model.

Q24 view "Normal"

Q24 view "Surround"


Zoomed image section

Q24 view "Full Image"

For more information on the views of the MOBOTIX Q models, see Section 3.2.3 *The First Image and the Most Important Settings in the Browser* of the *camera manual.* Refer to the information in Section 3.5.2 *Setting Image and Recording Formats* (the *Recorded Image* option) in the *camera manual* too.

Locking PTZ Commands

PTZ commands (zoom, pan and tilt) can be used with many of the different camera views (see previous section). However, this is feature is not always desirable, for example, if particular sections of images are under constant surveillance. For this reason, the PTZ commands can be locked using the following options (pop-up menu of the **Toggle PTZ** button):

- **Lock PTZ for All Views:** This option allows you to deactivate the PTZ commands for all views. You can no longer select image sections or pan/tilt the image. You are also no longer able to load and/or store views.

- **Lock PTZ for Multi Views:** This allows you to deactivate the PTZ commands for the views **Surround**, **Panorama**, **Twin View** and **Panorama/Focus**. You can no longer select image sections or pan/tilt the image in these views. You are also no longer able to load and/or store views.
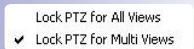
2.5   Setting Up Alarms And Recordings

You can centrally set up and manage recordings, alarms and notifications for one or more MOTOBIX cameras to be triggered for specified times and days of the week using MxEasy.

2.5.1   Operation Modes Of MxEasy

You can switch recordings/alarms on and off and activate the **_Alarm Planner_** as needed using **_Operation Mode_**. You can change these settings by clicking the button of the same name or by using the button's pop-up menu:

- **Switched Off Mode:** Recordings, alarms and notifications are not activated. The time periods set up in the Alarm Planner (see below) are not taken into account.
- **Alarm Planner Mode:** Recordings, alarms and notifications take place according to the times and dates that have been set in the Alarm Planner (see below).
- **Alert Mode:** Alarms and notifications take place according to the time and date settings that have been made in the Alarm Planner. Recording takes place continuously with the maximum frame rate (continuous recording). This overrides the type of recording and recording times set up in the Alarm Planner.

Notes
The **Manual Alarm** button is used to immediately activate a continuous recording for a limited period of time. After this time period has elapsed, MxEasy automatically switches back to the previously activated operation mode (see above).
This function is ideal for generating recordings of suspicious events, for example: If the security guard observes a suspicious situation, he or she can activate the manual alarm and continue to observe the situation. If the situation continues to appear suspicious, he or she can click the button again to extend the recording time by five minutes. The recording ends automatically after the time period has elapsed (or it can be stopped manually by clicking the button again).
These functions can also be activated using the button's pop-up menu.

2.5.2 Alarm Planner

You can set up recording modes, alarms and notifications for one or more cameras according to time and date in just a few steps in the **Alarm Planner**:
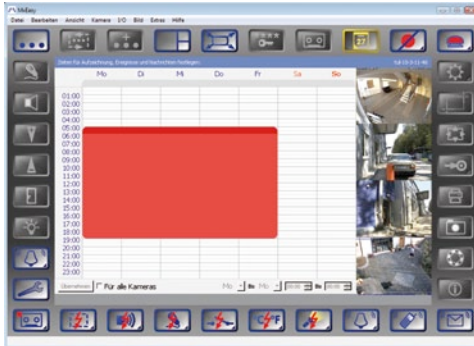

Section 2.5.3, Setting Time Periods, Section 2.5.4, Selecting The Recording Mode, Section 2.5.5, Setting Up Alarm Sensors (for event recording only) Section 2.5.6, Setting Alarm Notifications, Section 2.5.7, Assigning Settings To One Or More Cameras

2.5.3 Setting Time Periods

Use the mouse to draw a window in the calendar field **to set a time period in the Alarm Planner.** You can continue to adjust all settings of the time window after it has been created. For example, you can change a time period on Monday from 2 AM to 4 PM to Tuesday from 6 AM to 8 PM using the mouse.

- **Creating Time Periods:** Use your mouse to draw a box inside the calendar window (see figure above) to create a new time period.

- **Moving Time Periods:** Use the mouse to drag the window to the desired time and day of the week to move a time period. A **hand cursor** appears automatically when the mouse pointer hovers over a time window.
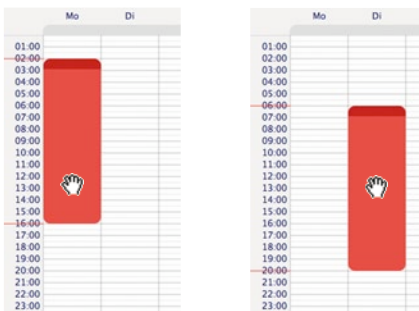
- **Changing Time Periods:** If you want to shrink or enlarge a time period, drag the edge of the time window accordingly using the mouse. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window. You can also use the weekday and time fields (in the lower section of the time planner) to adjust the active time period down to the minute.

- **Deleting Time Periods:** Select the window with the mouse and press the DELETE key on the keyboard (or right-click the time period and choose **Remove** in the pop-up menu) to delete a time period.

- **"Background" Time Period:** The areas that are not assigned to specific time periods (times and days) fall into a collective time period. This period can also be assigned a particular recording mode, alarm sensors and alarm notifications. Right-click outside a defined time period in the calendar field and make the desired settings using the pop-up menu (see following sections).

Hint
Make the settings for the "background" time period first. Then configure the individual time periods.

2.5.4 Selecting The Recording Mode

You can set up a **continuous or event recording** using the pop-up menu of the time period (right-click the time period). You can also set up the recording mode using the pop-up menu of the button for the recording (right-click the button on the lower edge of the MxEasy program window). Make sure to assign it a recording mode after activating the correct time window in the Alarm Planner.
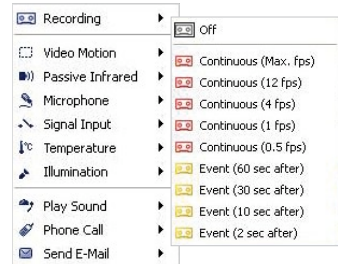
The camera continuously records data for **continuous recording** and for **event recording**, the camera begins recording when an alarm sensor is triggered (see *Section 2.5.5, Setting Up Alarm Sensors*). The time period will be colored either **red** (continuous recording) or **yellow** (event recording) depending on the recording mode you have selected. The recording symbols in the pop-up menu are also colored either red or yellow.

If **event recording** is selected, you need to also select at least one alarm sensor for the corresponding time period. Event recording is activated when the alarm sensor is triggered (see *Section 2.5.5, Setting Up Alarm Sensors*).

The recording status is indicated by the colored camera symbol in MxEasy (on the left above the main window). For more information on the recording features of the MOBOTIX camera, see Chapter 8 *Recording* of the *software manual*.

Notes
A period of two seconds before the beginning of the event is saved automatically along with the event for event recording.

2.5.5 Setting Up Alarm Sensors

When the **Alarm Sensor** of the MOBOTIX camera (or the active connected CamIO or ExtIO) is triggered, event recording and alarm notification are activated (see *Section 2.5.4, Selecting The Recording Mode* and *Section 2.5.6, Setting Alarm Notifications*).
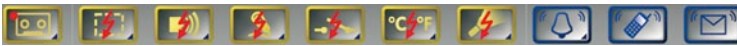
You can set up alarm sensors using the pop-up menu of the time period (right-click the time period). You can also set up the alarm sensors using the pop-up menu of the corresponding button (right-click the button on the lower edge of the MxEasy program window). Make sure to assign it an alarm sensor before activating the correct time window.

Off
- Custom Windows
- Upper Gateway
- Center Gateway
- Lower Gateway
- Left Doorway
- Center Doorway
- Right Doorway
- Full Minefield
- Upper Minefield
- Lower Minefield
- Gateway Reference

- **Video Motion Detection:** The alarm is triggered when a VM event is triggered in a MOBOTIX camera.

  The MOBOTIX camera uses motion detection windows to detect changes in the live camera image. You can select a predefined set of motion detection windows from the pop-up menu of this button. You can specify whether or not the window will be visible in the camera image with the *Show Video Motion Windows* option. This option can be used to check the windows and create user-defined windows (see below).

- **Passive Infrared Detection:** The alarm is triggered when a PI event is triggered in a MOBOTIX camera. MOBOTIX cameras of the model series **M12** and **D12** are equipped with a PIR sensor (Passive Infrared Sensor) as standard. **M22M** and **D22M** models can use the PIR of a connected **MOBOTIX ExtIO**. The PIR sensor enables motion detection even in the dark.

- **Microphone (for Noise Detection):** The alarm is triggered when a MI event is triggered in a MOBOTIX camera. This event can be triggered either by the built-in camera microphone or the microphone of an active connected CamIO or ExtIO.

- **Signal Input Detection:** The alarm is triggered when a SI event is triggered in a MOBOTIX camera. This event can be triggered either by the signal input of the MOBOTIX camera or by an active connected CamIO or ExtIO.

- **Temperature Detection:** The alarm is triggered when a TP event is triggered in a MOBOTIX camera. This event can be triggered either by the temperature sensor of the MOBOTIX camera or by the temperature sensor of an active connected ExtIO.

- **Illumination Detection:** The alarm is triggered when an IL event is triggered in a MOBOTIX camera. This event can be triggered either by the image sensor of the MOBOTIX camera or by the illumination sensor of an active connected ExtIO.

For additional information, see Section 7.6 *Events* in the *software manual*.

Custom Video Motion Detection Windows:

The *Custom Windows* option (in the pop-up menu of the **Video Motion Detection** button) allows you to create and edit individual video motion detection windows using your mouse.

- **Creating Video Motion Detection Windows:** Use your mouse to draw a box inside the camera image in the main window (see figure) to create a new window.

- **Moving Video Motion Detection Windows:** To move a window, drag and drop it to the location you want with your mouse. A **hand cursor** appears automatically when the mouse pointer hovers over a window.
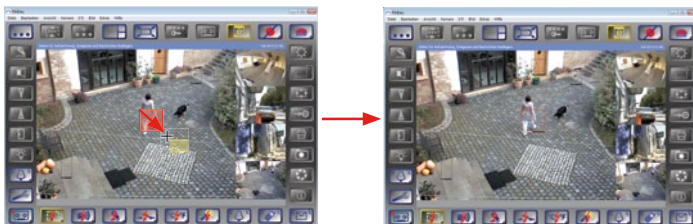
- **Changing Video Motion Detection Windows:** Drag the edge of the window using your mouse to increase or decrease the size of a window. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window.

- **Deleting Video Motion Detection Windows:** To delete a window, click the **X** button in the upper right corner of the window or press the **DEL** key on your keyboard.

2.5.6 Setting Alarm Notifications

Alarm Notifications can be sent when the alarm sensor of the MOBOTIX camera (or the active connected CamIO or ExtIO) is triggered (see *Section 2.5.5, Setting Up Alarm Sensors*).

You can set up and activate alarm notifications using the pop-up menu of the time period (right-click the time period). You can also set up the alarm notifications using the pop-up menu of the corresponding button (right-click the button on the lower edge of the MxEasy program window). Make sure to assign it an alarm notification before activating the correct time window

You must then select at least one alarm sensor for the corresponding time period (see *Section 2.5.5, Setting Up Alarm Sensors*). The selected alarm notifications are sent when the alarm sensor is triggered.

- **Sound Notification (audio playback):** Click this button to activate playback of an audio file on the speaker of the MOBOTIX camera (or an active connected CamIO or ExtIO). Click the button a second time to deactivate the feature.
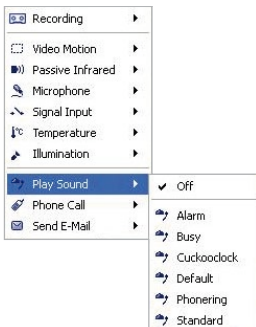
    This function can, for example, play a pre-recorded audio file over the camera loudspeaker to inform a suspicious person that he or she is being observed and recorded ("You are unauthorized to enter this area! You are under video surveillance. Please leave the premises immediately.").

- **VoIP Phone Notification:** Click this button to activate the VoIP phone call notification from the MOBOTIX camera. Click the button a second time to deactivate the feature.

    This function can be used to alert the security guard that there is an alarm situation (for example, motion is detected in an office building at night). A message can be transmitted via telephone ("Message from surveillance camera 15, office 32, 4th floor: Motion has been detected in this room.").

- **E-Mail Notification:** Click this button to activate e-mail notification from the MOBOTIX camera. Click the button a second time to deactivate the feature.

  This function can be used to document incoming vehicles in a corporate parking lot for later evaluation. E-mails are better for messages that do not require immediate action. This function makes it possible to send images via e-mail even if no recording medium is available (for example, an external data server).

Specific settings are necessary for each notification mode, for example, the name of the audio file, a phone number, an e-mail address and/or additional basic settings of the MOBOTIX camera. MxEasy detects whether valid settings have been made and if necessary, it prompts you to make the necessary settings. For more information on **camera settings**, see *Section 4.1.2, Audio Settings*, *Section 4.1.6, VoIP Settings For Phone Calls* and *Section 4.1.7, E-Mail Settings*.

You can reselect an audio file, a telephone number or an e-mail address that was set previously using the **Edit** menu command in the pop-up menu of one of the time periods or the corresponding button (right-click the time period or the button on the lower edge of the MxEasy program window).

For additional information, see Section 7.7 *Actions and Messages* in the *software manual.*

2.5.7 Assigning Settings To One Or More Cameras

1. Activate the camera that should be assigned a particular task. The active camera is always the camera displaying the live image in the small camera window in the upper right-hand corner of the Alarm Planner.

2. Click the **Next Camera** button until the desired camera is located in the upper right-hand camera window.

3. Assign the camera to the desired time periods with the corresponding notification characteristics.

4. Activate the settings for the camera by clicking **Apply**. Activate the **For All** checkbox and then click **Apply** to simultaneously assign all cameras to the same time period.

Hint
First carry out the settings that apply to all cameras (the **For All** checkbox, for example, activation and recording) and then carry out the settings for the individual cameras.

2.6 Evaluating Recordings

MxEasy *Player*. The most recent event image of the camera activated in the main window is automatically displayed when launching the Player for the first time. Four smaller windows are also visible. They show additional event images and the live image of the active

camera (small camera window at the bottom right).

The Player buttons are used for *Playback* of the recorded event sequences. You can also search for particular events using the *Search Event* function.

When you click any of the buttons marked with a red lightning bolt, the software plays back event images only. Buttons without a red lightning bolt show the entire recorded event sequence. This includes the event image and the time periods recorded before and afterwards.

Playing Video Sequences

- **Play:** This buttons plays back the recorded event sequences.
- **Fast Forward/Fast Backward:** These buttons play back the recorded event sequences quickly (in fast motion).
- **Play Events/Play Events Backwards:** These buttons play back the recorded event images (without the time periods recorded before or afterwards).

Jumping Directly To Events

- **First Event/Last Event:** These buttons jump to the the beginning of the oldest event sequence and to the end of the most recent event sequence, respectively.
- **Next Event/Previous Event:** These buttons jump to the next event image and the previous event image, respectively.

Procedure For Evaluating Recordings

We recommend the following procedure for evaluating recordings, viewing event sequences and preparing recordings for export (the **Search Event** button):
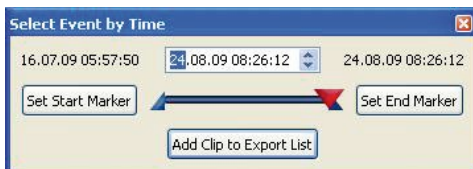

1. Enter the earliest time for which you would like to begin the evaluation.

2. Watch the events image for image to receive a quick overview of the recordings.

3. If you would like to have a closer look at a particular event, play back the recorded video sequence in real-time with audio.

4. Move the red triangle to take a look at the video at various spots within the recorded event sequences. The date and time of the current event are displayed in the upper section of the dialog box.

5. Set the start and end positions of the time period to be exported using the blue triangles.

6. Press **Add Clip to Export List** to add the clip marked by the triangles to the MxEasy export list. From here, this clip can by saved to a computer or an external storage device.

For more information on the export functions of MxEasy, see *Section 3.1.3, Exporting Event Sequences*.

2.7   Setting Up Users And Passwords

You will have access to all functions and authorizations (automatic administrator mode) the first time you launch MxEasy. If you would like to set up the software to limit user access to certain functions, we recommend using the predefined MxEasy access levels (**Administrator**, **Owner**, **User**, **Guest**). Specific functions are automatically preassigned to each access level.

Once you have set up a password for a particular access level, it is activated automatically (the access level **Guest** can be accessed without entering a password). Please note that passwords can only be set up in the **Administrator** access level.
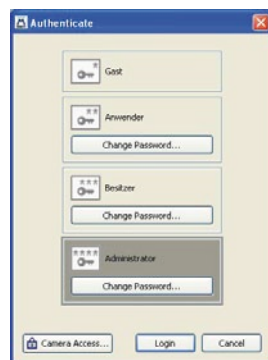
You can log on to the access level using the login dialog box (the **Authenticate** button). As long as the **Administrator** access level is activated, this dialog box also displays the buttons for setting up and changing an existing password (**Change Password**).

The active access level is indicated by the red star(s) on the button:

- **Administrator:** You have access to all functions and settings of MxEasy with the **Administrator** access level. In particular, this allows you to add new cameras to MxEasy and remove existing cameras from the software. This access level is the only one that allows you to set up and change passwords.

- **Owner:** You have access to all functions available for the **User** access level and to the majority of the remaining MxEasy functions in this access level.

- **User:** You have access to the recorded event sequences in addition to the functions available for the **Guest** access level.

- **Guest:** You can access live views of all cameras and save snapshots with this access level.

Notes
For an overview of the functions in the individual access levels, see *Appendix A, Access Rights for User Access Levels*.

Automatic Authentication On Launch

If you have set up passwords for the access levels, each time you launch MxEasy you need to select the access level and enter the correct password. If you would like to be logged on automatically, you can activate this option and select the relevant access level under **Tools > Preferences > General**. MxEasy then automatically logs on to this access level without prompting you for a password (see *Section 3.7, Changing Default Program Settings*).

You can change the access level by clicking **Authenticate** while the software is running. To do so, select the access level in the menu and confirm your selection by entering the correct password. If needed, the administrator can activate additional functions by selecting a different access level. After the settings have been made, you can return to the **Guest** access level using the same dialog box.

3   ADVANCED OPERATION

In *Chapter 2, Getting Started*, you learned about the basic features of MxEasy. Note, however, that MxEasy allows you to do much more than simply play back video sequences. In this chapter, we will familiarize you with the advanced features of this software.

3.1   Saving And Printing Snapshots

3.1.1   Saving Snapshots

The easiest way to take snapshots is to click the **Snapshot** button. If you do so, the image from the camera displayed in the main window will be saved immediately. This works for both live images and event images. The file name of a file saved as *.jpg contains the name of the camera followed by the date and time of the recording (for example, `mxcam 2008-11-24 15-05-13` for a file saved on November 24, 2008 at 3:05 PM and 13 seconds).

Note: You can specify a target folder for the saved images by choosing the **Settings** menu command in the **General** section (**Snapshots > Folder**).

3.1.2   Printing Snapshots

You can print a camera image in MxEasy using the **Print** button. When you click this button, the print preview will show either the live image of all cameras connected to MxEasy if the Live view (Player) is active or the most recent event image if the Event view is active. You can still adjust the layout, zoom factor and number of images per page.
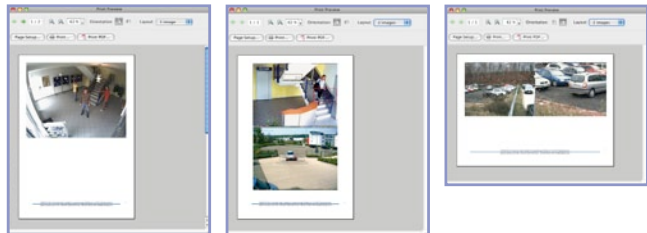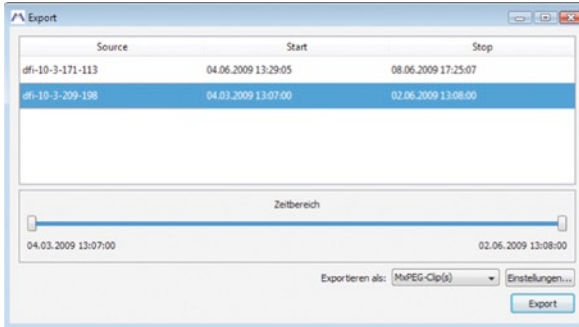

3.1.3   Exporting Event Sequences

Select the **Event Search** button in the Event view to export recorded video sequences from MxEasy.

Proceed as follows to specify event sequences for export:

1. Select the earliest time of the sequence you want to export. You can do so by moving the blue triangle on the left or entering a time in the Date/Time field (for example, using the arrow keys) and then clicking the **Set Start Marker** button.

2. Select the end time of the sequence you want to export. You can do so by moving the blue triangle on the right or entering a time in the Date/Time field (for example, using the arrow keys) and then clicking the **Set End Marker** button.

3. Click the **Add Clip to Export List** button. The Export dialog box will now open with the time range you selected. Previously selected time ranges may appear and, if necessary, can be removed manually (**Backspace**or **Delete** key).

4. Select the desired export format:
    *   **File Server Structure:** This option allows you to export the event sequences (files) of the selected time range in the same format in which they are saved in the file system. Unlike other options, this one does not convert the format and hence requires the least amount of time to export. We recommend using this option when you need to keep the files in their original format (for example, to preserve evidence for law enforcement purposes).

    *   **MxPEG Clip(s):** This option converts the event sequences of the selected time range to MxPEG files. MxPEG files can now be played back in MxControlCenter. Files in the MxPEG format also include the audio data recorded by the camera.

        You can define various options for exports, including a limit on file sizes, with the **Settings** button.

    *   **AVI Clip(s):** This option allows you to export (convert) the event sequences of the selected time range as an *.avi file (with or without audio). *.avi files can be played using Windows Media Player or VLC (VideoLanClient–available for Windows, Mac OS or Linux).

5. Select the export settings (via the **Settings** button). You can now specify different options for the export, including a **file size limit** as well as **audio** and **video encoding options** with which you can predefine parameters such as the resolution or video codec.

6. Start the export (click the **Export** button).
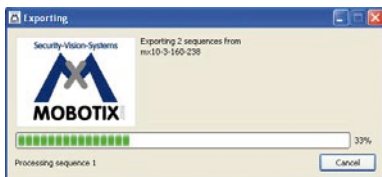
3.2 Backup And Restoring Settings

The Backup feature (the **Configuration Backup** button) allows you to save as well as restore all MxEasy settings and the complete configuration of each connected camera with the simple click of the mouse.
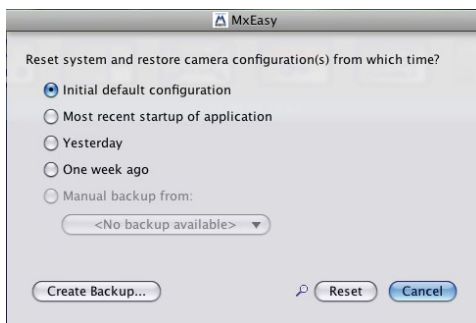
Creating A Backup

MxEasy automatically creates a backup when you start the program. You can also click the **Create Backup** button if you need to create one manually.

Loading A Backup

You can specify the time when a backup will be loaded using the following functions:

- **Initial default configuration:** Select this option if you want to reset MxEasy and all cameras to their initial configuration status.

- **Most recent startup of application:** This backup contains the configuration data of MxEasy when it was last launched.

- **Yesterday:** This backup contains the configuration data of MxEasy when it was first launched on the previous day.

- **One week ago:** With this option you can load the configuration data of a backup from the previous week or earlier.

- **Manual backup from:** You can select a manual backup from the list provided.

The selected configuration will be restored when you click the **Reset** button.

Note
Click the magnifying glass icon to open a file window that lists all saved backups.

3.3   Sequencer

The **Camera Sequencer** has an automatic switch feature for camera live images. When you press the Sequencer button, MxEasy cycles through the live image of each connected camera in the main window with a five-second interval. You can change the default interval setting using the **Settings** menu command (**Behavior > Camera Sequencer > Switch to next camera after**).
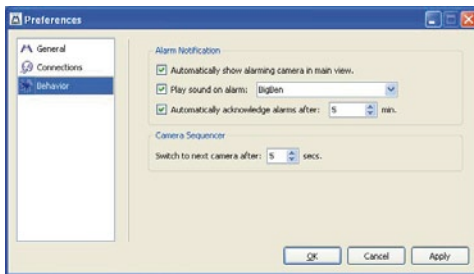
Using the arrow keys on your keyboard. You can stop or restart the automatic cycle through the images with the S​PACE bar. This gives you more time to review a suspicious situation, for example.

When a camera alarm occurs, the Sequencer display will be automatically interrupted and the image from the alarm-triggering camera will be shown.

Only the cameras that are activated in the Camera Overview will be shown in the Sequencer. The Sequencer will cycle through the camera images in the same order in which they appear in the Camera Overview. You can change the display order by moving the cameras with your mouse (for more information, see *Chapter 2.3, Displaying Live Images*).

3.4   Using Door Intercoms

The IT and Secure models of the **M12** and **D12** MOBOTIX cameras and the **ExtIO** and **CamIO** expansion models that are compatible with all MOBOTIX IT and Secure models are equipped with signal inputs and outputs. The signal inputs are capable of receiving a door bell signals, for example, and the signal outputs can transmit the command to open a door (or a gate) to a locking system (door opener).

This means that MxEasy, when used in conjunction with MOBOTIX cameras, can serve as a fully equipped and flexible door intercom system with video and audio transmission. Press the **Microphone** or **Loudspeaker** button to use the intercom (audio transmission). To open a door or turn on the light, press the **Door** or **Light** button. You can also play back a voice message that has been saved in a MOBOTIX camera (the **Sound** button).

- **Microphone:** The audio from the computer microphone will be transmitted to the camera loudspeaker for as long as you press and hold this button. This works the same way as if you were to make an announcement in a soccer stadium or on a train platform or to use a handheld transceiver or a door intercom.

- **Loudspeaker:** Press and hold this button to hear the audio from the camera microphone over the computer loudspeakers. This feature allows you to use MxEasy as a door intercom, for example.

- **Door:** You can activate a door opener connected to a MOBOTIX camera (or a connected ExtIO or CamIO) with this button via signal output 1. The signal output/door opener will deactivate automatically after five seconds.

- **Light:** This button allows you to enable and disable a device (for example, the light for the door intercom) connected to a MOBOTIX camera (or a connected ExtIO or CamIO) via signal output 2. Click the button once to switch on the light and click again to switch it off.

- **Sound:** Click this button to play back an audio file that has been saved in a MOBOTIX camera on the loudspeaker of that camera. You can also play back an individual voice message that has been previously recorded and saved there using the camera software. You can select one of the audio files that is available on the camera displayed in the main window from the pop-up menu of the button (right-click). MxEasy will remember the audio file you selected for each specific camera.

| Alarm |
| Busy |
| Cuckooclock |
| Default |
| Phonering |
| Standard |

- **Volume Up:** Click this button to increase the loudspeaker volume on the computer running MxEasy.

- **Volume Down:** Click this button to lower the loudspeaker volume on the computer running MxEasy.

More information on the audio features of MOBOTIX cameras can be found in Section 5.4.5 *Microphone and Loudspeaker,* Section 7.7.4 *Sound on Event,* the *software manual,* the *ExtIO* and *CamIO user manuals,* and the manuals of the individual MOBOTIX camera models.
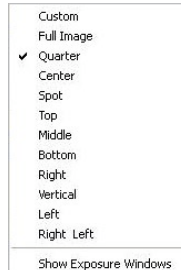
For more information on the signal inputs and outputs of MOBOTIX cameras, see Section 7.7.1 *Signal Output,* the *software manual,* the *ExtIO* and *CamIO user manuals,* and the manuals of the individual MOBOTIX camera models.

3.5   Working With Image Settings

3.5.1   Changing Image Settings

This button gives you access to functions that allow you to set individual image setting parameters (**Saturation**, **Brightness**, **Backlight**, **Sharpness**). You can also control the exposure of the images using this button:

- **Saturation:** Use this setting to increase/decrease the color saturation of the image. The higher the value, the more color displayed in the image.

- **Brightness:** This setting allows you to adjust the image brightness. Make sure that the exposure windows are being used effectively before you make any adjustments.

- **Backlight:** This setting improves the display of a camera image that contain over-exposed or underexposed areas. A typical example of this is a room that is illuminated only by daylight from the windows. Objects located around the edges are displayed too dark and with too little contrast. Increasing the value will increase overall illumination to properly display the dark areas in the image. This setting is particularly useful for high-contrast (color) night images.

- **Sharpness:** This setting allows you to display sharper camera images. Make sure not to set the sharpness too high since doing so may result in poorer image quality (for example, for high-contrast and finely detailed images).

- **Exposure Window:** The MOBOTIX camera sets the exposure window to ensure the proper exposure/brightness of the camera's live image. You can select a predefined set of exposure windows from the pop-up menu of this button. The corresponding window will then be displayed in the camera's image and you can check the modified exposure control directly in the live image. Alternatively, you can click the **Exposure Window** button to activate the next set of exposure windows in the list (pop-up menu). You can specify whether or not the exposure window will be visible in the camera image (green box) with the *Show Exposure Window* option.

Custom
Full Image
✓ Quarter
Center
Spot
Top
Middle
Bottom
Right
Vertical
Left
Right Left
Show Exposure Windows

- **Default Settings:** Click this button to restore the default values for all settings.

Custom Exposure Windows

The *Customize* option (from the pop-up menu of the button) allows you to create and edit individual exposure windows using your mouse.

- **Creating Exposure Windows:** To create a new exposure window, use your mouse to draw a box inside the camera image in the main window (see figure).
- **Moving Exposure Windows:** To move a window, drag and drop it to the location you want with your mouse. A **hand cursor** appears automatically when the mouse pointer hovers over a window.
- **Modifying Exposure Windows:** Drag the edge of the window using your mouse to increase or decrease the size of a window. A **resize cursor** appears automatically when the mouse pointer hovers over the edge of the window.
- **Deleting Exposure Windows:** To delete a window, click the X button in the upper right corner of the window or press the DEL key on your keyboard.

3.5.2 Setting Image And Recording Formats

This button gives you access to functions that allow you to set individual image creation parameters.

- **Resolution:** You can set the resolution of the camera image with this option. The resolution you set may be different from the resolution displayed in the main window of MxEasy. The camera image in MxEasy's main window will always be displayed in a 640 x 480 pixel area, regardless of the image resolution that is currently set on the camera.

    When you click this button, a magnifying glass will appear in the camera image. Click the plus or minus (+/-) button of the magnifying glass to change the image

resolution of the camera (the new image resolution will soon appear in the camera image). You can now move the magnifying glass to a new image area.

The section in the magnifying glass area always shows the original resolution of the camera (one pixel of the camera resolution will appear as one pixel on your monitor). This means that if the image resolution of the camera is set to a value higher than 640 x 480 pixels, the magnifying glass area will show an enlarged image (for example, 2 times or 4 times the size). This function allows you to accurately judge the image detail provided by the camera and used for the recording.

- **Custom Size:** You can create a camera image with a custom resolution and size with this option. To do so, use your mouse to draw a box directly in the camera image. The window set up using this function will be automatically stored and activated once you deactivate this button. A selected window can be deleted by pressing the DEL key on your keyboard.

  This function is useful if only certain areas of the camera image are allowed to be monitored, for example. For more information, see Section 5.5.3 *General Image Settings* in the *software manual*.

- **Image Quality:** The three values that can be set using this button (*Fast*, *Normal*, *High*) influence the image quality in which the image sensor is to be read. The camera may require more (*High*) or less (*Fast*) bandwidth depending on the setting. The *Normal* option offers a good compromise between the High and Fast options. For more information, see Section 5.5.3 *General Image Settings* and Section 5.6.2 *Image Programs* in the *software manual*.

- **Obscuring Image Areas:** If certain areas in the image are meant to remain unrecognizable, you can use this button to obscure these areas with the camera. To do so, use your mouse to draw one or more boxes directly in the camera image. Windows set up in this manner will be automatically saved and activated once you deactivate this button.

This function is useful if certain areas of the camera images are not allowed to be monitored (for example, workstations, public areas, etc.).

• **Camera Frame Rate:** You can set the frame rate provided by a camera (options: *Unlimited, 25 fps, 16 fps, 12 fps, 8 fps, 4 fps*) from the pop-up menu of the button (right-click). This function can be used as a way to manage bandwidth. Note, however, that you should primarily use the functions outlined in *Section 3.6, Bandwidth Management*.

• **Mounting Position:** You can set the mounting position of a MOBOTIX Q22 camera (*ceiling* or *wall*) from the pop-up menu of this button (right-click). If ceiling mounting is enabled, you can also specify the North direction of the camera. Activate the button and turn the image to the right or left using the symbols that appear. The North direction set in this manner will be saved automatically once you deactivate this button. For more information, see Section 3.2.3 *The First Image and the Most Important Settings in the Browser* of the *Q22M camera manual*.

• **Recorded Image:** You can specify from the pop-up menu of this button (right-click) whether the full uncorrected images of the camera (*Full Image Recording* option) or only the visible image area (the *Save Displayed Image* option) will be recorded. This feature is only available for certain models.

Note that any subsequent search of the entire camera image (PTZ functions) is only possible with the *Full Image Recording* option.

Q24M: Displayed Image   Q24M: Full image

• **Record Audio:** If this button is activated, the audio from the camera microphone will be included in the recording. If the button is deactivated, the video sequences will be recorded without sound.

3.6   Bandwidth Management

MxEasy's Bandwidth Management feature offers you an effective tool for optimizing the retrieval and display of live images from cameras in MxEasy.

Ideally, an Ethernet network will always have enough network bandwidth to transfer all data at "full network speed" so that the live images of all cameras connected to MxEasy can be shown in all display windows at full resolution and full frame rate. And this is also the case for a wired Ethernet network. If the cameras (or the computer running MxEasy) are connected to the network via a wi-fi or ISDN connection or a modem, there will generally not be enough bandwidth to display the video sequences smoothly in MxEasy.

With MxEasy's Bandwidth Management, you can now set up the cameras to only retrieve the live images you need at the resolution and frame rate that MxEasy requires to properly display them at any given time. This means you can have the live image from the camera in the main window displayed at full resolution and full frame rate while the live images in the smaller camera windows are shown at a lower resolution and reduced frame rate. This is possible given that MOBOTIX cameras display both high-resolution video sequences and lower resolution images ("preview" images) at the same time. MxEasy is then able to retrieve those preview images (for more information, see Section 11.2 *Accessing the Live Image and the Event Images* of the *software manual*).

If one of the cameras from a small camera window is displayed in the main window (for example, due to an alarm or manually set by the user), MxEasy will show the already available preview images immediately and in real-time in the main window and then start to retrieve the images from the respective camera at full resolution from that point on. The live image in the main window will therefore appear for only brief moment at a lower resolution until the newly requested high-resolution image becomes available.

You can apply one of the following strategies for bandwidth management in MxEasy depending on how much network bandwidth is available (or on the network connection type for the MOBOTIX cameras). (**Settings > Connections > Bandwidth Management** menu command; see also *Section 3.7.2, Connections*.)
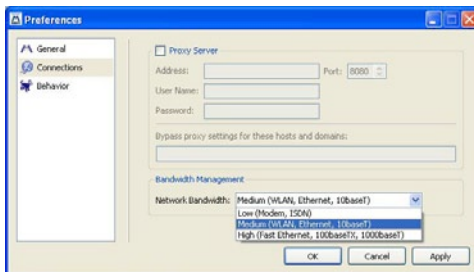
- **Low (modem, ISDN):**

  This setting is recommended for modem or ISDN connections.

  - Main window: The live images of the active camera in the main window are shown at full resolution, but at a lower frame rate (four frames per second).
  - Camera windows: The images from the cameras displayed in the small camera windows are displayed at a lower resolution and lower frame rate (four frames per second) using the Preview feature.

- **Medium (wi-fi, Ethernet, 10Base-T):**

  This default setting is generally recommended for wi-fi connections or Ethernet networks with reduced bandwidth (for example, 10BaseT, Powerline adapter, two-wire media converter, etc.).

  - Main window: The live images from the active camera in the main window are displayed at full quality (full resolution and full frame rate).
  - Camera windows: The images from the cameras displayed in the small camera windows are displayed at a lower resolution and lower frame rate (four frames per second) using the Preview feature.

- **High (wi-fi, Ethernet, 100Base-TX, 1000Base-T):**

  This setting is recommended for Ethernet networks with unlimited bandwidth (for example, 100Base-T/100 Mbps, 1000Base-T/1 Gbps, fast draft-N compliant wi-fi with good signal strength).

  - Main window, camera windows: Both the live images from the active camera in the main window and the images from the cameras shown in the small camera windows are displayed at full quality (full resolution and full frame rate).

The **Recording of Video Sequences** always occurs at full resolution (maximum image quality) irrespective of the display quality of the camera's live images.

The live images from the active camera in the main window are always displayed at full resolution.

If the MxEasy program window is minimized in the task bar or dock, all live images will be automatically retrieved at a low frame rate (four frames per second). This is the reason why the live images briefly appear at a lower resolution when you restore the program window.
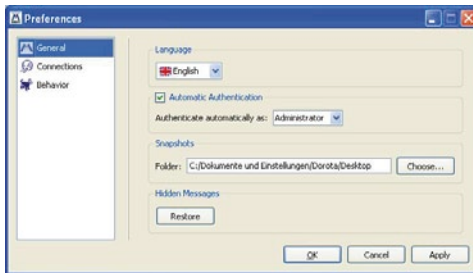
3.7   Changing Default Program Settings

Use the following menu commands to view the default program settings of MxEasy:

- **Windows: Tools > Preferences**
- **Mac OS X: MxEasy > Settings**
- **Linux/UNIX: Edit > Settings**

3.7.1   General

- **Language:** You can select the language of the MxEasy user interface with this option. Currently only **English** and **German** are available.

  Note: When you change the language, MxEasy must be restarted so that all elements will appear in the language you selected. MxEasy will open a specific dialog box for this purpose.

- **Automatic Authentication:** You can use this setting to automate the user login process when launching the program. MxEasy then automatically logs on to this access level, without requiring entry of a password. For more information, see *Section 2.7, Setting Up Users And Passwords*.

- **Folder for snapshots:** Use this option to specify a directory or folder for saving images recorded with the **Snapshot** button. For more information, see *Section 3.1.1, Saving Snapshots*.

- **Restore hidden messages:** Click the **Restore** button to show any message and warning windows that have been specifically deactivated by the user.

Note
MxEasy will warn you if an error occurs when recording data to a storage medium such as an SD card. You can permanently deactivate this error message in the warning dialog box by selecting the **Don't Ask Me Again** checkbox.

3.7.2 Connections
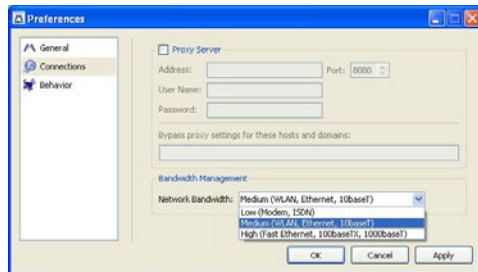
- **Proxy Servers:** If you connect to the Internet in your local network via a proxy server, then the proxy settings need to be entered in the MxEasy program settings. This is necessary if MxEasy accesses the Internet for purposes such as downloading software updates (see *Section 4.5, Software Update*).

- **Bypass Proxy Settings:** If a proxy server has been entered, access to all network devices will occur over this server even if the device is a remote camera or a local network camera. This may result in slower access to the local camera or even prevent access entirely. You should therefore enter the IP addresses (or symbolic names) of all local network devices in the **Bypass proxy settings** field. You can also specify a range of addresses (for example, 192.168.*).

- **Network Bandwidth:** This setting allows you to optimize the retrieval and display of the live images from the camera in MxEasy. Depending on the setting you select, the camera images will always be retrieved and displayed in MxEasy either at full resolution and full frame rate or at reduced resolution (Preview feature) and reduced frame rate (for more information, see *Section 3.6, Bandwidth Management*).

3.7.3 Behavior
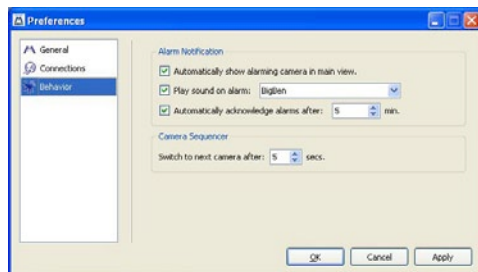
- **Automatically show alarming camera in main view:** If this option is enabled, the live image of a camera connected to MxEasy, but not visible in the main window or the camera windows will automatically be shown in the main window of MxEasy in

the event that the camera triggers an alarm. You will then be able to view the associated event sequence immediately (the **View Events** button). For more information, see *Section 2.5.5, Setting Up Alarm Sensors*.

- **Play sound on alarm:** When you enable this option, MxEasy will automatically play back the selected alarm sound as soon as a camera triggers an alarm. The alarm sound will end when it is acknowledged automatically or manually by a user (by clicking the camera window). For more information, see *Section 2.5, Setting Up Alarms And Recordings* and *Section 4.4, Custom Alarm Sounds*.

- **Automatically acknowledge alarms after:** This setting allows you to specify the time after which MxEasy will automatically acknowledge alarm messages from connected cameras. Automatic acknowledgement may also end a still active alarm sound. For more information, see *Section 2.5.5, Setting Up Alarm Sensors*.

- **Camera Sequencer Interval:** You can define how long the display will last before switching to the image of the next camera with the sequencer interval. For more information, see *Section 3.3, Sequencer*.

Notes
If MxEasy is minimized and one of the cameras reports an alarm, the program window will be restored automatically and appear in front of all other applications.

4   ADVANCED FEATURES OF MXEASY

4.1   Camera Settings

4.1.1   Overview

Many of the settings for the connected MOBOTIX cameras can be centrally managed using MxEasy (the **Camera Options** button).

Select the camera whose settings you would like to change (the **Next Camera** button). The live image from the camera you selected will be displayed as a preview image to help you identify the specific camera you want.
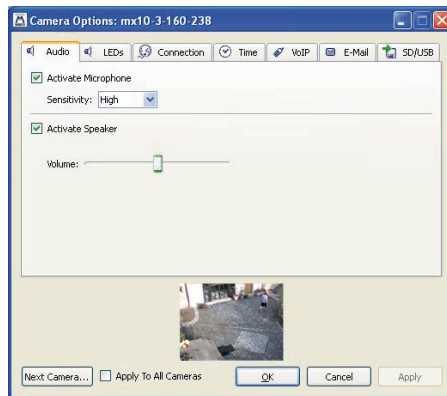
Click **Apply** or **OK** and your settings will be sent to the selected camera or, if the **For All** checkbox is checked, to all the cameras connected to MxEasy.

Note: No preview image will be shown if the **For All** checkbox is enabled.

- **Section 4.1.2, Audio Settings** You can make the most important audio settings for the camera in this dialog box. Here, you can set the volume of the camera speaker and the sensitivity of the camera microphone, for example. You can also upload an audio file to the camera and activate it for alarm notifications, for example.

- **Section 4.1.3, LED Settings:** The LEDs of the MOBOTIX cameras can be used to signal certain functions and statuses. For example, the top two LEDs flash when the camera detects an event. You can assign selected flashing patterns to particular camera actions and functions in this dialog box.

- **Section 4.1.4, Connection Settings:** You can enter the IP address of a DNS server in this dialog box. You are required to enter a DNS server if you would like to receive alarm notifications online via e-mail or VoIP phone call. In addition, you can also activate encryption for all data transferred to and from the MOBOTIX cameras (HTTPS/SSL), if required.

- **Section 4.1.5, Time Settings**: Each MOBOTIX camera has a battery-buffered real-time clock that always keeps the time correct, even in the event of a power failure. However, you need to make sure that all cameras connected to MxEasy are synchronized. You can do this using a time server that synchronizes all cameras to the exact same time. Use this dialog box to enter or select a time server. Note that you can also specify a MOBOTIX camera as a time server.

- **Section 4.1.6, VoIP Settings For Phone Calls**: MOBOTIX cameras can make phone calls using Internet telephony (for alarm notification, for example). In order to use this feature, you need to register with a VoIP provider for Internet telephony (for example, sipgate.de). You can enter the access data for the registered VoIP account in this dialog box.

- **Section 4.1.7, E-Mail Settings**: MOBOTIX cameras can send e-mails (for alarm notification, for example). In order to use this feature, you need to provide a valid e-mail address. You can enter the access data for the account in this dialog box.

- **Section 4.1.8, SD/USB Settings**: MOBOTIX cameras can save their recorded video sequences either to the internal camera storage or an external storage medium. Using an external storage medium can substantially increase your storage capacity. For the storage medium, you can choose the integrated SD card of the camera or an external USB medium (USB stick, USB hard drive, etc.), for example. The basic settings and basic functions of this feature can be used in this dialog box.

Note
You may need to reboot the camera for some of the changes described here to take effect. If it is necessary, MxEasy will prompt you before rebooting the camera automatically.

4.1.2 Audio Settings
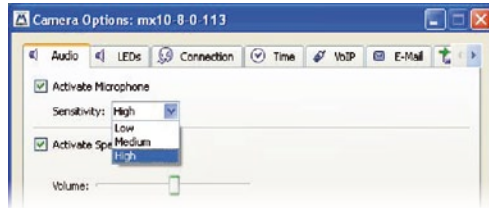
- **Activate Microphone and Sensitivity:** The camera microphone can be activated or deactivated and the microphone sensitivity can be adjusted as required using this option.

- **Activate Speaker and Volume:** The camera speaker can be activated or deactivated and the volume can be adjusted as required using this option.

- **Upload Audio File:** Here, you can select one of the audio files saved in the camera or choose an audio file from your computer and upload it to the MOBOTIX camera. MxEasy automatically converts the file to the correct audio format for the MOBOTIX camera. You can play back the audio file over the camera speaker using the **Test Volume** button.

For additional information, see Section 5.4.5 *Microphone and Speaker* and Section 7.7.4 *Sound on Event* in the *software manual.*

4.1.3 LED Settings

- **Show Recording State:** You can set the LEDs of the MOBOTIX camera to blink when an event occurs and a recording is made with this option.

- **Show Camera Access:** The LEDs of the MOBOTIX camera blink whenever the camera is accessed, i.e., if the live image from the camera is displayed in MxEasy or a configuration has been changed using the Camera Options button, for example.

More information on the LED blinking patterns of MOBOTIX cameras can be found in Section 5.4.3 *LED Signals and LED Configuration* in the *software manual* and in the *camera manual* of the respective camera model.

4.1.4   Connection Settings
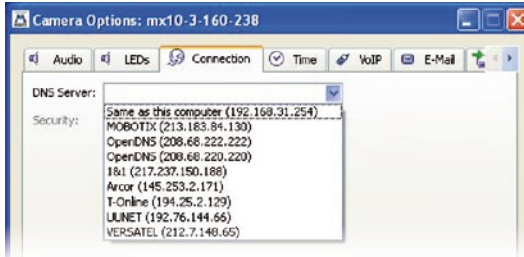
- **DNS Server:** If you have MOBOTIX cameras connected to the network via a manual IP address, you can enter the IP address of the DNS server used by your network here. MxEasy will automatically suggest the DNS server that your computer is currently using (the *Same as this computer* option). A DNS server must be entered in a MOBOTIX camera in order for the **Time Server**, **VoIP** and **E-Mail** functions to work.

- **Use Secure Connections (HTTPS/SSL):** If necessary, you can activate encryption for all data transferred via HTTPS between MxEasy and the MOBOTIX cameras. We strongly recommend using this option for security-related applications.

For additional information, see Section 5.10.4 *SSL Encryption and Certificates* in the *software manual.*

4.1.5   Time Settings

- **Synchronize with Time Server (NTP):** Select a time server from the list or enter the symbolic name of an NTP time server of your choice. If the MOBOTIX cameras are set to automatically obtain their IP addresses via DHCP, then make sure that a valid DNS server is entered in the MOBOTIX cameras (the **Connection** tab).

- **Synchronize with Master Camera:** Alternatively, you can select one of the cameras connected to MxEasy as a time server.

For additional information, see Section 5.4.2 *Date and Time/Time Zones and Time Servers* in the *software manual.*

If the cameras are connected to the Internet, you can select a time server from the drop-down menu. You can also enter a time server in the local network if one is available. If neither a time server on the Internet nor a local time server is available, you should specify one of the cameras connected to MxEasy as the master camera for the purpose of time synchronization. Doing so will at least ensure that all cameras remain synchronized with each other and hence allow saved video sequences to be played back in a synchronized manner.

The time display in the title bar of the main window will blink if the system time of an active camera (Live view) in the main window deviates from the system time of the computer by more than 15 seconds. In this case check the computer to see if it is also synchronized with a time server. Try to set up the same time server for both the computer and the MOBOTIX cameras.

4.1.6 VoIP Settings For Phone Calls
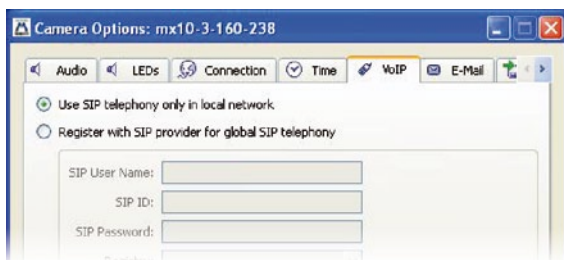
- **Use SIP telephony in local network only:** No SIP user data is required if telephone calls are to be made within the local network only (for example, to softphones installed on computers).

- **Register with SIP provider for global SIP telephony:** Enter the user data that you received from your SIP provider upon registration into the appropriate fields (**SIP User Name**, **SIP ID**, **SIP Password** and **Registry**). If the MOBOTIX cameras are set to automatically obtain their IP addresses via DHCP, then make sure that a valid DNS server is entered in the MOBOTIX cameras (the **Connection** tab).

For additional information, see Section 7.7.6 *Phone Call* and Section 7.8.4 *Phone Profiles* in the *software manual*. For detailed information on all telephony features of the MOBOTIX cameras, see Chapter 9 of the *software manual*.

4.1.7 E-Mail Settings

- **E-Mail Data:** Enter the user data of an e-mail account in the fields provided in the dialog box: **SMTP Server**, **Port** (normally Port 25), **Authentication** (normally **SMTP Login**) and **User Name** and **Password**. If the MOBOTIX cameras are set to automatically obtain their IP addresses via DHCP, then make sure that a valid DNS server is entered in the MOBOTIX cameras (the **Connection** tab).

For additional information, see Section 7.7.5 *E-Mail* and Section 7.8.3 *E-Mail Profiles* in the *software manual*.

4.1.8 SD/USB Settings
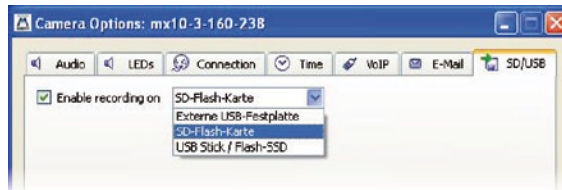
- **External USB Hard Drive:** Select this option if you want the MOBOTIX camera to record data to a connected external USB hard drive directly.

- **SD Flash Card:** This option sets the MOBOTIX camera to record data to an inserted SD Flash card.

- **USB Stick/Flash SSD:** Select this option if you want the MOBOTIX camera to record data to a connected USB stick or an external Flash SSD directly.

- **Other:** This option is automatically activated if the MOBOTIX camera is configured to use a recording mode that does not support USB, SD or Flash SSD storage devices. MxEasy is currently unable to set up such a recording mode directly.

A yellow recording icon will appear in MxEasy (below the main window on the left) if one of the *External USB Hard Drive* , *SD Flash Card* and *USB Stick/Flash SSD* options is set as the recording target. For more information on recording, see Section 8.3 *Recording Modes* in the *software manual*.

Caution
The **Enable recording on** drop-down menu shows different options depending on which camera model you are using. Make sure that the appropriate recording device is connected to the MOBOTIX camera. MxEasy will display an error message if the recording device is improperly connected or not connected at all.
Before the recording device can be used in MxEasy, it must be formatted for the MxFFS file system using the camera software (see Section 8.3.6 *Recording on Flash, USB and SD Storage Devices* in the *software manual*). In future versions MxEasy will be able to automatically format the recording device.

4.1.9   Camera Information

Information on the selected camera settings of the currently active camera in the main window can be accessed using the **Camera Information** button:

4.2   Setting Up A Global User For All Mobotix Cameras

If necessary, you can set up one administrator to be used for all MOBOTIX cameras connected using MxEasy (the **File > Authenticate** menu command, **Camera Access** button). This will replace the default administrator (User Name: `admin`, Password: `meinsm`). MxEasy then accesses all connected cameras using the new user name and the new password.


Setting up a new administrator not only provides quick and reliable protection against unauthorized access, it also blocks browser access to the Guest screen (**Public Access**; for more information, see Section 5.4 *Users, User Groups, Passwords, Supervisor Mode* in the *software manual*.

Caution
A password set up in MxEasy for the global access level will never be shown for security reasons. Make sure that you store this password in a secure place.
If no user name and password have been entered, MxEasy uses the factory defaults (user `admin`, password `meinsm`). This automatically enables public access to the Guest screen via a browser window.
If you do not want to use a camera with MxEasy and want to use it elsewhere, you should first remove the camera from MxEasy (the **Camera > Remove Camera** menu command) and then reset it to the status it had before it was connected to MxEasy (the **Reset** button). If you do so, any modified user names and passwords for the administrator will be reset to their default settings.
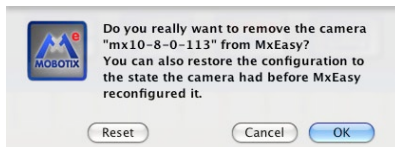
4.3   Customizing The User Interface

Thanks to the software architecture of MxEasy, it is possible to change various elements of the user interface (for example, buttons and backgrounds).

4.3.1   MxEasy Skins

You can change the appearance of MxEasy using the **Tools > Style** menu command. The user interface can be customized to your needs by changing the *.css file and the graphics files.

4.3.2   Editing Skins

An MxEasy skin consists of one or more `*.css` files and a number of graphics files.

- **Windows:** The files for the various skins can be found in the **StyleSheets** subdirectory of the MxEasy program directory.

- **Mac OS:** The *.css files are located in the application file in **MxEasy.app > Contents > StyleSheets** while the graphics files are located in **MxEasy.app > Contents > StyleSheets > Images**.

   Right-click **MxEasy.app** in the Finder and select **Show Package Contents** from the pop-up menu to open the directory structure.

   For example, create a copy of the file `MxEasy_Eco.css` and change the path for the graphics files. To do so, use a text or CSS editor and save all `*.css` files without formatting ("Plain Text" or "Text Only").

Caution
Make sure to make backup copies of the relevant files before editing any files. Do not work with the original MxEasy files. Use the copies instead. Knowledge of `*.html` and `*.css` files is necessary if you would like to create or modify skins. When editing graphics files, make sure that you do not change the pixel size (width and height). All graphics files should be saved as a `*.png` file, especially if they contain transparent areas.

4.4   Custom Alarm Sounds

4.4.1   MxEasy Alarm Sounds

You can add your own audio files to the alarm sounds in MxEasy (**MxEasy > Preferences > Behavior**).
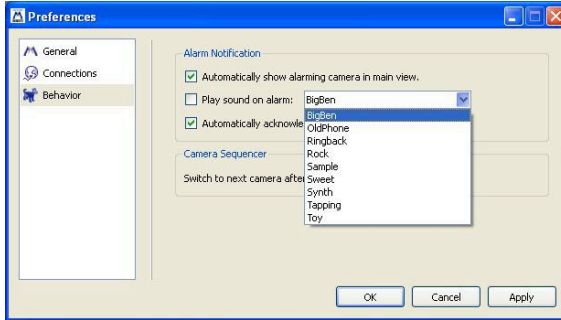
4.4.2   Adding Alarm Sounds

Any *.wav audio file you want can be used as an MxEasy alarm sound.

- **Windows:** The audio files for alarm sounds can be found in the **Sounds** subdirectory of the MxEasy program directory.
- **Mac OS:** All audio files for alarm sounds are located within the application file (**MxEasy.app > Contents > Sounds**).

Kopieren Sie Ihre neuen Sounddateien in das entsprechende Verzeichnis. Die neuen Alarm-Sounds sind anschließend sofort in MxEasy verfügbar.

4.5   Software Update

MxEasy Software

MxEasy can search for a new program version automatically using the update function. An Internet connection is required to check for updates. You can adjust how often the program checks for updates (the **MxEasy > Tools > Software Update** menu command). You can also check for updates manually (**Check now**). If a new program version is available, it will be displayed together with the release notes (**Release Notes**). The update can now be downloaded onto your computer (**Download Package**) or installed immediately (**Install Package**). MxEasy must be restarted after an update has been installed.
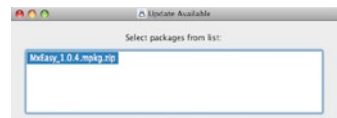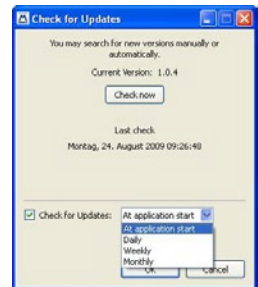
Camera Software

MxEasy will also check the software versions of all connected cameras. If a new version is available for at least one of the connected cameras, MxEasy will show a list from which you can select the language version and file type (*.mpl or *.zip) you want to download. The update can now be downloaded onto your computer (**Download Package**) or installed immediately (**Install Package**). MxEasy will reboot the updated cameras after installation.

The following language combinations (paired with English) are available for older cameras:

- **en,cn:**   English/Chinese
- **en,de:**   English/German
- **en,es:**   English/Spanish
- **en,fr:**   English/French
- **en,it:**   English/Italian
- **en,jp:**   English/Japanese
- **en,ru:**   English/Russian

For newer cameras, the software always installs all available languages. You can therefore easily install the most recent software for your camera.

Caution
If you connect to the Internet in your local network via a proxy server, then the proxy settings need to be entered correctly in the MxEasy program settings. More information on this topic can be found in Section *Section 3.7.2, Connections*.

Notes

A   MOBOTIX GLOSSARY

ActiveX

Control element on Windows computers which may also be used in other programs (including Windows Internet Explorer) to run special tasks. The **MxPEG ActiveX** control element allows video and audio data from MOBOTIX cameras to be displayed in other applications (including Internet Explorer).

Arming

This refers to the process of activating an alarm system so that events trigger the appropriate alarms. Traditional alarm systems can be armed using a key switch or by entering a code on a keyboard. MOBOTIX cameras can be armed using a "software switch."

Auto Grid

Automatically generated grid used for displaying the live images from all cameras.

Bonjour

(French for *"hello"*) is a technology developed by Apple based on the **Zeroconf** protocol, which is a method to automatically recognize network services on IP networks. For example, you can find a printer or a network camera on the local network without knowing the exact IP address of the device you are looking for.

CamIO

MOBOTIX signal module that the camera uses to directly operate lamps, sirens and access controls, as well as external audio components (speakers and microphones).

CCTV

Abbreviation for *Closed-Circuit Television.* A television system in which the analog video signal is transmitted to monitor within one particular environment only (for example, a building). The term CCTV is often used for video surveillance systems.

CF Card

Abbreviation for *Compact Flash Card.* An ultra-compact, digital (random-access) memory medium based on flash memory modules and well-known as an image storage medium for digital cameras.

CIF, 2CIF, 4CIF (in accordance with PAL TV standard)

Common Intermediate Format. Corresponds to 1/4 TV image with 288 rows and 352 pixels (0.1 megapixel). 2CIF (1/2 TV image) has the same small number of rows (288), but 704 pixels (0.2 megapixel). 4CIF corresponds to the image quality of a traditional TV image with 576 rows and 704 pixels (0.4 megapixel).

CMOS Sensor

Abbreviation for *Complementary Metal-Oxide Semiconductor Sensor.* Sensor for energy-efficient digitalization of image information. CMOS sensors are used as image sensors in digital cameras.

DevKit

Camera installation kit with independent image sensors based on MOBOTIX M12 or M22 cameras, intended for concealed installation in other devices.

DHCP

Abbreviation for *Dynamic Host Configuration Protocol.* Allows a server to automatically assign devices in the network with the appropriate configuration (including the IP address, DNS server and gateway), as opposed to fixed IP addresses on the individual network devices.

DNS

Abbreviation for *Domain Name Service.* Allows the domain names of servers on the Internet (e.g. `www.mobotix.com`) to be linked ("resolved") to their corresponding IP addresses (e.g. `212.89.150.84`).

Dome Camera

Most often refers to cameras with a round and compact design. The lens can be freely positioned and is protected by a transparent dome-shaped plastic housing.

DSL

Abbreviation for *Digital Subscriber Line*. Denotes a fast Internet connection capable of providing bandwidth of up to 16 Mbps for a typical household.

DualDome

Dome camera with two lenses and image sensors such as the MOBOTIX D12D. These lenses can deliver wide-angle and telephoto images independently of one another.

DVR

Abbreviation for *Digital Video Recorder*.

DynDNS

Abbreviation for *Dynamic DNS* (or *DDNS*, Dynamic Domain Name Service). Similar to *DNS*, this links domain names (e.g. `mydomain.com`) with IP addresses, whereby the IP addresses may change at any time. This service provides a convenient method to access your MOBOTIX cameras from home or work if the camera internet connection is not through a *router* which assigns a fixed IP address, but instead over a *DSL* connection with a dynamically assigned IP address from the provider. A well-known provider of this (free) service is `www.dyndns.org`.

Ethernet

The most common technology for communication within a wired network. It facilitates data exchange between all devices (computers, printers, IP cameras, etc.) connected to a local area network (LAN).

Events

An event refers to a situation when something happens or changes. In terms of video surveillance, this means a change in the status of an area that is being monitored. This can be movement of a person, a change in brightness, a drop in ambient temperature, the detection of a noise via a microphone, an electrical signal at a signal input, the manual operation of a button, etc.

ExtIO
MOBOTIX signal module that the camera uses to directly operate lamps, sirens and door openers as well as external audio components (speakers and microphones).

Fixdome
Camera without moving parts in a dome-shaped housing.

Flash Memory
See *CF Card*.

fps
Abbreviation for *frames per second*. See *Frame Rate*.

Frame Rate
The frame rate specifies how many frames per second (*fps*) are generated and sent by the camera. The human eye perceives movement as a fluid video sequence when more than 12 images per second are produced.

HDTV
Abbreviation for *High Definition TV*.

HiRes
Abbreviation for *High Resolution*. Refers to high-resolution images (above 1 megapixel).

Image Compression
Image compression reduces the file size of an image. This is particularly important when transferring and saving files.

Image Processing
Digital image processing. The goal is to correct errors made during image generation (caused by overexposure, underexposure, blurring, weak contrast, image noise, etc.) in order to create a "better" image.

IP Network
Data network based on the *Internet protocol* (TCP/IP).

IP Telephone
See *VoIP*.

JPEG
Abbreviation for *Joint Photographic Experts Group*, responsible for the development of the JPEG standard method for image compression. JPEG is the most common lossy image format for photos on the Internet. Loss in image quality is barely noticeable at compression rates between 99% and 60%.

Latency
Time interval elapsed between when an image is captured by a camera and when that same image is displayed on the monitor.

Layout

Describes the layout of video sources on a screen site of the MxControlCenter. When displaying the images from network cameras, the layout determines the positions and resolutions of the images displayed on the monitor. In addition to the actual video images, you can also incorporate graphic elements such as the location of the cameras, etc.

LED

Abbreviation for *Light Emitting Diode*. An electronic semiconductor component, built in to MOBOTIX cameras and add-on modules, which emits light when current flows through the component in the correct direction.

Linux

Free and open source operating system; serves as the operating system for all MOBOTIX cameras.

Megapixel

Images that are 1 million pixels. Larger formats of images can be displayed as a multiple of this, for example, 3 Megapixel is equal to 3 million pixels.

MonoDome

Dome camera with one lens.

Motion Detection

Action of sensing a movement within a particular area. MOBOTIX cameras use algorithmic methods to detect changes from image to image in predefined areas, while taking into account preset conditions. If a camera detects a movement, it signals an event and triggers an alarm.

Motion JPEG, or M-JPEG,

is a video compression method where each individual image is compressed separately as a JPEG image. Unlike MPEG, the quality of M-JPEG recordings is not dependent on movement within the image.

MPEG

Motion Pictures Expert Group. Standard for compressing and saving image and video data, resulting in quality loss. Originally created for playing entertainment content on PCs, MPEG concentrates on displaying still image material and compromises the quality of moving image material in order to increase the transmission speed.

MxControlCenter

MOBOTIX video management software for professional control of mid-sized and large camera networks.

MxEasy

MOBOTIX video management software for small and compact camera networks of up to 16 cameras.

MxPEG

MOBOTIX-developed protocol for compression and storage of image and video data with minimal network load and high image quality. The MxPEG *ActiveX* control com-

ponent allows video and audio data from MOBOTIX cameras to be displayed in other applications (including Internet Explorer). To date, MxPEG remains the ONLY protocol specifically designed for security applications

NAS
Abbreviation for *Network Attached Storage.* A storage system connected via an Ethernet cable. All network devices (cameras) have access to this storage system.

Network
Group of computers that are connected via various cables and share access to data and devices such as printers and network cameras.

PIR
Passive Infrared Sensor for motion detection.

PoE
Power over Ethernet. A technology for supplying network-ready devices (such as network cameras) with power via the Ethernet data cable.

PTZ
Abbreviation for *Pan/Tilt/Zoom.* Refers to the movement of a video camera to the left and right, up and down, and to the camera's ability to enlarge an image.

Quad Display
Layout in which the images from four cameras are displayed in one window.

Resolution
Indicates the number of pixels used to produce an image. The more pixels an image has, the greater the detail when the image is enlarged. The resolution is expressed as either the number of pixel columns times pixel rows, or as a total number of pixels. A VGA image has 640 columns and 480 rows (640 x 480 pixels), which equals 307,200 pixels, or approximately 0.3 megapixel.

RoHS
This abbreviation stands for the *Restriction of Hazardous Substances Directive* and refers to EC Directive 2002/95/EC, which prohibits the use of certain hazardous substances when manufacturing products and components. The goal of this directive is to prevent these substances from harming the environment when the products are disposed of later.

Router
Network device that connects multiple networks with one another. The router creates the physical connection between the devices in different networks (like a hub), analyzes the relevant data packets and forwards ("routes") these packets to the correct target network.

SD Card / MicroSD card
SD Memory Card (*Secure Digital Memory Card*). A digital storage medium based on flash storage modules such as USB sticks.

Search
Monitoring of recordings, searching for a particular event.

Sequencer
Feature that automatically switches the camera displayed in the main window after a specific time delay.

SIP
Session Initiation Protocol. Network protocol for setting up, controlling and terminating a communication connection via a computer network. SIP is frequently used in conjunction with IP telephony.

Signal Input/Signal Output
Coupling an alarm triggering device (for example a fire alarm system or a network camera) to a control center or another type of transmitter (for example, a telephone or IP network). A typical signal input/output scenario in video surveillance progresses as follows: an event triggers an alarm that then displays, for example the video image from the network camera that triggered the alarm on the monitor at a control center.

Snapshot
Photograph of a situation created spontaneously and directly with a mouse click or other such event directed by the user.

Switch
Hardware used to connect multiple network devices (computers, cameras, printers, etc.) within a network. A *PoE switch* can also supply the cameras with power over an Ethernet cable.

UPS
Uninterruptible Power Supply. Refers to devices that continue to supply power in the event of a sudden power failure. These devices usually operate using a battery. UPS is installed on the power lines of devices and systems in order to protect them in the event of a power failure.

VoIP
Voice over Internet Protocol. Telephony using computer networks.

Wizard
Refers to a software component that helps the user install or set up a particular program and that guides the user through the configuration process by means of simple questions.

WLAN
Wireless Local Area Network. Used to provide Internet connections without the need for cables.

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Notes

MOBOTIX - The HiRes Video Company

Security-Vision-Systems

MOBOTIX

To demonstrate our confidence in the quality of our products, MOBOTIX cameras were used to capture all the images that appear in this manual.

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You can find the latest version of this document at `www.mobotix.com` under **Support**.

CE

Technical specifications subject to change without notice!

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Intuitive Control Software For MOBOTIX Cameras

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HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

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